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COMPLICATIONS IN THE URINARY TRACT DURING PREGNANCY

WILLIAM F. BRAASCH, M.D.

and

ROBERT D. MUSSEY, M.D.

Rochester, Minnesota

LESIONS in the urinary tract which complicate pregnancy include infection, pyelo-ureterectasis, vesical retention of urine and various surgical conditions, such as stones, hydronephrosis, tuberculosis and neoplasm. Some writers consider toxemia of pregnancy the result of a lesion of the urinary tract. The last, however, is debatable.

Infection and Pyelo-ureterectasis

Infection of the urinary tract, although not a common complication of pregnancy, occurs often enough so that the attending physician always must be on the lookout for it. Unless the condition is recognized early, serious damage may result. In most cases the infection involves primarily the kidney and is confined largely to the renal pelvis. The condition usually is referred to as "pyelitis" rather than "pyelonephritis" even though the adjacent renal parenchyma also is involved. After delivery, infection may appear in the bladder that is overdistended by retention of urine.

Renal infection whether it occurs before, during or after delivery usually is the result of renal stasis and, as such, it would seem to be ascending in type rather than of hematogenic origin. Although opinions differ concerning the factors which produce renal stasis during pregnancy it is now generally believed that two factors are present. In the first place, some stasis is caused by the effect on the ureter of specific hormones secreted during pregnancy. As a result an adynamic pyelo-ureterectasis of moderate degree occurs which is associated with diminished peristaltic activity. In many cases, however, some and possibly a greater degree of stasis appears to be caused by pressure of the pregnant uterus on the ureter. The presence of a mechanical factor is supported by the following evidence: (1) the frequent occurrence of unilateral pyelo-ureterectasis during pregnancy; (2) the frequency with which a greater degree of stasis is found on one side (usually the right) even when the pyelo-ureterectasis is bilateral and (3) involvement of the upper portion of the ureter only, the lower third remaining normal.

Urographic Data.—Changes in the outline of the renal pelvis and ureter occurring during pregnancy may be visualized urographically. These changes are of clinical as well as anatomic interest. Pyelo-ureterectasis, in a variable degree, is present and can be demonstrated by excretory urograms in approximately 70 per cent of pregnant women. The degree of dilatation is moderate in many cases but in some it is extensive. Although it is bilateral in many cases, the right side is affected more often and to a greater degree than the left side (Fig. 1). The ureter usually is involved largely in the upper half or two-thirds of its course and is dilated to a comparatively great-

From the Section on Urology (Braasch) and the Section on Obstetrics and Gynecology, Mayo Clinic, Rochester, Minnesota.

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er degree than the pelvis (Fig. 2). In most cases the outline of the affected renal pelvis and ureter will recede to normal after delivery. When the infection is severe and has continued for several months, however, localized cicatricial changes with atony in the wall of the pelvis and ureter will persist for several months and often the pyelo-ureterectasis becomes permanent. Strangely enough, the residual pyelo-ureterectasis usually causes no symptoms and does not prevent renal infection from disappearing spontaneously or from being eliminated by chemotherapy.

Fig. 1. Unilateral pyelo-ureterectasis confined to right side. Outline of fetal head may be noted in bony pelvis.

Fig. 2. Ureterectasis grade 2, confined to the upper two-thirds of the right ureter; and right pyelectasis, grade 1; left renal pelvis is normal. Outline of fetal head is visible on right side.

In the course of routine urographic studies made many years after delivery, it is not uncommon to discover a variable degree of pyelo-ureterectasis. Although this type of residual ureteropelvic deformity usually has no clinical significance, the symptoms which led to the urogram being made may be ascribed erroneously to a ureteral lesion if the etiologic factors are not appreciated. We have observed patients who have had the ureters dilated repeatedly on the assumption that the pyelo-ureterectasis, revealed in the urogram, was caused by stricture. In cases of residual pyelo-ureterectasis after pregnancy, however, no actual stricture of the ureter is present. On cystoscopic examination no obstruction is offered to the passage of a larger catheter into the ureter and if a delayed urogram is made it may not reveal any residual medium. The function of the kidney may be normal. Residual pyelo-ureterectasis sometimes has led to unnecessary surgical exploration and even nephrectomy. When unexplained pyelo-ureterectasis of this type is noted in the course of routine excretory urography, the possibility of a residual deformity from previous pyelitis of pregnancy must always be considered.

Pyelitis of Pregnancy.—In former years pyelitis of pregnancy was not recognized until symptoms, such as urinary frequency, dysuria, or malaise and fever, appeared. Pyelitis caused much concern because it often remained undiscovered until extensive renal damage had taken place. Since the advent of adequate prenatal examination and care and the early use of chemotherapy, the severe complications that formerly were observed seldom occur. Care of the pregnant woman entails frequent urinalysis and if the presence of pus is verified in the catheterized urine, treatment should be undertaken at once.

According to Randall[5], in a series of 5,960 consecutive deliveries at the Mayo Clinic in fourteen years, pyelitis of pregnancy was noted in 117 cases (1.9 per cent). This condition seems to be somewhat more prevalent among primigravidas than among multigravidas. Renal pain and urinary frequency are uncommon. More often symptoms referable to the urinary tract are not

present. Unexplained fever and malaise may be the only signs of infection of the urinary tract. In the 117 cases of pyelitis of pregnancy, only limited evidence of increased hazard to the lives of the mother and child was noted if the complication received early attention. Because of the presence of pyelitis, labor was induced at or near term in seven cases (6 per cent). Most of these patients had advanced renal infection when they came to the clinic. One patient who had pyelonephritis of long standing and uremia died. This death, which resulted in a maternal mortality rate of 0.85 per cent, could have been prevented if the infection had been recognized earlier.

If examination of voided urine reveals the presence of pus or erythrocytes, a catheterized specimen of urine should be obtained. Vaginal secretions adjacent to the external meatus of the urethra may contain a variable amount of pus and erythrocytes which often are included in the voided urine. Examination of the catheterized urine should include not only determination of the presence of pus, blood, albumin and sugar, but also a search for bacteria. If urinary infection is present, the physician should have at least a superficial knowledge of the invading bacteria in order to administer proper treatment. Such knowledge can be obtained easily by Gram's method of staining the dried urinary sediment, a simple procedure that can be performed in any laboratory. Whether the bacilli or cocci are Gram-positive or Gram-negative makes considerable difference in the indications for treatment. In most cases a Gram-negative bacillus is found in the stained sediment, and on cultures, if made, it is usually identified as a member of the colon bacillus group. A mixed infection with several types of bacteria sometimes is discovered.

Infection with colon bacilli, when detected early, usually responds readily to chemotherapy. In fact, an increased intake of fluid alone often relieves early pyelitis of pregnancy. One of us (Mussey) long has recommended an intake of at least eight glasses of fluid daily (1,920 c.c.). Under this regimen the incidence of urinary infections is reduced to a remarkably low level. With the onset of infection an effort should be made to maintain the intake of fluid at 4,000 to 5,000 c.c. in twenty-four hours, provided the urinary output is adequate. If severe infection is present, solutions of 5 per cent glucose or physiologic saline should be given subcutaneously and intravenously, in addition to the fluid taken by mouth. The intravenous administration of fluid is most effective, since many pregnant women are nauseated and consequently are unable to take large amounts of fluid by mouth. However, intravenous administration of saline solution is contraindicated in the presence of hypertensive toxemia. If nausea is present, a sulfonamide compound also can be administered intravenously. Interruption of gestation is necessary only in cases of chronic pyelonephritis in which there is evidence of lowered renal function or persistent severe obstruction of the ureter.

When the forced fluids do not relieve an uncomplicated urinary infection, any of the sulfonamide compounds may be given. If Gram-negative bacilli are noted in the urine, sulfa drugs usually quickly control the infection. Of the various sulfonamide compounds, sulfathiazole is probably employed most frequently. In some cases sulfadiazine seems to cause less reaction and, more recently, sulfamerazine has been recommended because of its effectiveness in small doses. The amount of these drugs required for treatment of urinary infection is materially less than that required for treatment of systemic and pulmonary infections. As a rule, a dose of 2 gm. daily is sufficient and, after two days, this amount can be reduced to 1 gm. daily. The possibility of idiosyncrasy of the patient to sulfonamide compounds must be borne in mind and if a toxic reaction occurs, administration of the drug should be discontinued immediately.

When use of the sulfa drugs is contraindicated and diuresis fails to eliminate the infection, any of the various forms of mandelic acid, such as elixir of mandelic acid or calcium mandelate, may be tried. Acidification of the urine is an important factor in overcoming bacterial infection. A pH of 5.5 or less is desirable. There is one objection to the use of mandelic acid: namely, the necessity for limitation of the intake of fluid. If the infecting organism is the Streptococcus faecalis, mandelic acid, with acidification of the urine, often is the best and sometimes the only effective treatment. When mixed infection caused by bacteria of the colon bacilli group and Streptococcus faecalis is present, the administration of both a sulfonamide compound and mandelic acid may be necessary. The sulfonamides are given until the colon bacilli are eliminated and the mandelic preparations until the Streptococcus faecalis

disappears. In severe infections with streptococci, penicillin may be used. It will not be effective in the presence of infection caused by Gram-negative bacilli.

Before the advent of chemotherapy, the urologist often was called in consultation when a large amount of pus was found in the urine. When the infection would not respond to other forms of treatment, it often subsided after the introduction of ureteral catheters. Drainage of the urine retained in the dilated renal pelvis and lavage with mild antiseptic solutions frequently resulted in subsidence of infection. In severe cases it was necessary to allow the ureteral catheters to remain in place for several days and to undertake lavage of the renal pelves. At present this treatment is seldom necessary. In fact, during the last two years it has been employed in only one case at the clinic.

The management of pyelitis of pregnancy is not completed on cessation of the acute attack. In some cases the infection persists for a number of weeks after subsidence of acute symptoms. Dilatation of the ureters, which persists throughout pregnancy and afterward, may predispose to recurrence of infection. The acute attack may recur during pregnancy and occasionally the infection is permanent, unless thorough and persistent treatment is undertaken. Repeated examinations of the urine should be made after the infection is controlled.

Vesical Retention of Urine

The possible seriousness of postpartum retention of urine in the bladder is not fully appreciated. Difficulty in voiding urine immediately after parturition is a common complaint. There may be few or no subjective symptoms of urinary retention even when large amounts of residual urine are present. It is a question whether catheterization should be undertaken early or whether function of the bladder will return spontaneously after the development of sufficient intravesical pressure. Retention of urine prepares the way for bacterial invasion and the longer the retention continues the greater becomes the danger of infection. Catheterization should not be postponed longer than eight hours and it should be undertaken earlier if the patient complains. The patient often has no desire to void for twelve hours or more and, unless the output of urine is watched, retention may be overlooked. Sometimes the patient seems to void normally when actually only part of the content of the bladder is passed. The amount of urine retained often measures 1,200 or 1,300 c.c. According to Randall, catheterization after delivery was necessary for 124 (15 per cent) of 796 obstetric patients observed at the Mayo Clinic during 1943. Of this number, seventy-one patients were catheterized because of complete retention of urine; the amount retained averaged 1,300 c.c. or more. Incomplete emptying of the bladder may persist for several weeks after delivery. Unless the condition is recognized early and relieved, secondary infection often occurs. In most cases of retention, the function of the bladder is restored to normal after catheterization is performed at intervals of six hours for several days. Not infrequently a retention catheter is employed. The administration of sulfonamide compounds in small doses as a prophylactic measure may be of aid in preventing secondary infection.

Surgical Conditions

Pathologic conditions of the urinary tract that were dormant prior to pregnancy sometimes suddenly become active and require surgical attention. Among such lesions, renal and ureteral stone, hydronephrosis, renal tuberculosis and neoplasm in the kidney or bladder have been observed at the clinic. When the complicating lesion becomes troublesome in the latter stages of pregnancy, postponement of surgical intervention until after delivery usually is advisable unless the condition is acute. Prior to the third trimester, pregnancy offers no serious obstacle to surgical intervention. Premature labor, however, is the most frequent complication of surgical intervention at any time during pregnancy.

If pyuria fails to clear up after treatment with forced fluids or chemotherapy, the presence of some complication must be suspected. In most cases the diagnosis can be inferred from roentgenographic studies, including ordinary roentgenograms and excretory urograms. The latter method of examination often reveals lesions in the urinary tract that would otherwise be overlooked; it could be employed more frequently by general practitioners. If necessary, cystoscopic examination may be performed. Such diagnostic procedures as cystoscopic examination and intravenous urographic examination rarely cause any trouble during pregnancy.

Toxemia

The exact relation of pyelitis to acute hypertensive toxemia of pregnancy has not been determined. However, according to most obstetricians (Mussey and Lovelady,[2] Baird,[1] Prather[3] and Prather and Sewall[4]), no definite evidence is available that pyelitis is a factor in acute toxemia of pregnancy. Baird found that when albuminuria and hypertension developed during pregnancy, pyelitis seldom was present. In other words, hypertension, which is the predominant finding in acute toxemia, rarely is found in association with uncomplicated pyelitis of pregnancy. A woman who has chronic renal disease and becomes pregnant, however, may exhibit an increase of renal symptoms and hypertension. Acute toxemia also may be superimposed on chronic vascular disease. In most cases of toxemia of pregnancy no urinary infection is found —but when it is present—it usually is of a chronic and long-standing type.

Summary

The best method of detecting early infection in the urinary tract during pregnancy is by routine examination of the urine at regular intervals. Examination of the urine should not be postponed until symptoms appear. If pus is discovered in the voided urine, a catheterized specimen should be obtained. Next, the type of bacteria present in the dried urinary sediment should be determined and appropriate chemotherapy should be advised. Large amounts of fluids should be given orally and, if necessary, intravenously. Several quarts of fluid (3,000 to 4,000 c.c.) may be taken daily by mouth. The early use of sulfonamide compounds permits small doses and results in little reaction. The various forms of mandelic acid, with acidification of the urine, may be of value in eliminating certain types of infection. The administration of penicillin may be of value in some types of resistant infection.

The frequent occurrence of postpartum retention of urine should be kept in mind and if difficulty of urination or unexplained fever occurs after parturition, catheterization should be undertaken.

If pyuria persists, the possibility of some other complication, such as stones, hydronephrosis, tuberculosis or neoplasm, should be investigated. Roentgenograms and intravenous urograms are valuable diagnostic aids and, if necessary, cystoscopic examination should be undertaken.

Evidence indicates that acute uncomplicated pyelitis is not the etiologic factor in acute preeclamptic toxemia or eclampsia. Acute toxemia of pregnancy may be superimposed on chronic disease of the kidneys or vascular system.

Residual pyelo-ureterectasis may result from pyelitis of pregnancy. This often persists permanently and, when discovered in the course of urography, it may be erroneously regarded as a renal lesion causing the patient's symptoms. When unexplained pyelo-ureterectasis of this type is noted in the course of routine excretory urography, the possibility of a residual deformity from a previous pyelitis of pregnancy must always be considered.

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PLACENTA ACCRETA IN DUPLEX UTERUS FOUND AT CESAREAN SECTION

JAMES R. MANLEY, M.D.

Duluth, Minnesota

PLACENTA Accreta means the abnormal attachment of the placenta to the uterine wall. It is due to the lack of decidua basalis which normally develops at the placental site and acts as a barrier to the erosive and penetrating action of the trophoblast. It is the presence of the decidua basalis which allows the placenta to separate cleanly from the uterine wall during the contractions of the uterus following the expulsion of the child. Separation occurs through the substance or between the layers of the decidua. In the absence of the decidua the villi penetrate

deeply into the musculature and the placenta becomes firmly fixed to the uterine wall. It cannot be by peeled off cleanly but can only be removed by tearing through the villi or uterine musculature.

Placenta increta means a very deep penetration of the villi into the muscle, while in placenta percreta, the perforation of the uterine muscle occurs. It is comparable to the condition found in the tubal pregnancy where there is a lack of decidua formation allowing for perforation of the tube by the growing trophoblast.

Placenta accreta is rather rare. Its incidence varies, according to different authors, from one in two thousand to one in six thousand cases; however, there are probably many partial cases which are never reported. Irving and Hertig made an exhaustive study of twenty cases and reported them in 1937. Albert Matthew reported eight cases found in the literature and one of his own of placenta accreta found after cesarean section. Feuhling of Cloquet recently reported a case in Duluth, Minnesota.

Symptoms.—Although it is extremely rare, placenta accreta should be thought of in any case in which the placenta cannot be expressed from the uterus in a reasonable time. The differential diagnosis should include retained placenta and simple adherent placenta. A retained and separated placenta is accompanied by bleeding. A simple adherent placenta may or may not bleed, depending upon the degree of partial separation. A typical complete placenta accreta usually does not bleed much unless attempts are made at manual removal. Partial accreta will bleed profusely. Diagnosis, however, is usually made during attempts at manual removal.

It is comparatively easy to find the line of cleavage in simple adherent placenta and to peel the placenta off the uterine wall. In placenta accreta no cleavage line is present and attempts to separate it cause profuse hemorrhage. The uterine wall is usually thinner than normal and persistence may result in perforation of the uterus. The treatment is supravaginal hysterectomy.

Case Report

This case is one of placenta accreta found in duplex uterus at Cesarean section. This patient, a primipara, aged twenty-seven, was seen in her first pregnancy in October, 1937, at about the sixth month of her pregnancy. History was negative except that she stated a tubal pregnancy had been diagnosed eighteen months previously during which she bled three weeks. No operation was performed, however, and she recovered spontaneously.

Examination showed two separate, normal appearing cervices with a complete vertical vaginal septum extending to the introitus, completely dividing the vagina. She was apparently pregnant in the left horn, and there was a firm mass in the cul de sac a little to the right, about the size of a lemon, which probably represented the nonpregnant uterus. Further examination was negative with the exception of a small pelvis of the generally contracted type.

Because of the uterine anomaly and the small pelvis, a Cesarean section was done at term and a normal convalescence occurred. She again became pregnant in 1940 and her confinement was due April 13, 1941. There was no indication of toxemia during this pregnancy.

On March 19, 1941, she came to the hospital complaining of moderate persistent painless vaginal bleeding, dark red in color. An x-ray of the abdomen was taken after filling the bladder with an opaque material and a diagnosis of placenta previa was made. Although the x-ray diagnosis is possibly not accurate with a double uterus, clinical symptoms were such as to substantiate a diagnosis of placenta previa. A transfusion was given and she was prepared for section.

Operation.—A midline incision was made below the umbilicus and the uterus walled off with gauze. It was covered with adhesions over the lower half. The uterus presented a very unusual appearance. It was distinctly bluish in color and apparently very thin walled. It appeared more like a large ovarian cyst with many large dilated veins coursing through the walls. It differed entirely from the usual appearance of a pregnant uterus at term. The upper part of the fundus had a more normal appearance. The abdominal incision was extended upward and the uterine incision was made high up and the baby extracted and the cord tied. The placental attachment was now explored. There was scarcely any uterine wall at the placental site, only a thin fibrous layer being present. The placenta covered the lower uterine segment in front and one edge covered the internal os.

It was impossible to find a cleavage line and separate the placenta from the uterus. It seemed to have invaded the uterine wall. The very thin wall of the uterus was torn while trying to remove the placenta and no contractions were present in spite of intravenous ergotrate and pituitrin. The hemorrhage became excessive and it was decided to remove the uterus. This was a double uterus and the nonpregnant horn, now about the size of a man's fist, somewhat altered the usual procedure. Amputation of the pregnant horn was done just above the junction of the two uteri. The bladder was attached to the uterus abnormally high due to the previous section which was of the low cervical type. There was a large amount of bleeding and during the operation the bladder was accidentally torn

into. A supravaginal hysterectomy of the pregnant uterus was completed, the bladder tear was repaired with chromic catgut and a mushroom catheter placed in the bladder. There was considerable oozing present throughout the operation but this was controlled fairly well. There was evidence of beginning shock and 700 c.c. of blood were given during the operation and the patient left the table in fairly good condition.

The patient made a very good recovery, the bladder repair healed satisfactorily, the retention catheter was removed on the fourteenth day, and the patient left the hospital two days later.

This patient now has a double vagina with a complete septum. One side of the vagina leads to the cervix of the amputated fundus on the left, and the other to the normally functioning fundus of the right side. She menstruates regularly and normally and has been in good health since the operation. She has a very satisfactory method of birth control due to this anomaly.

Pathological Report—The specimen consists of body of uterus which is still connected with the tube and ovary and which contains the placenta. The placenta is difficult to separate. On pulling on the placenta, the wall of the uterus, which is quite thin in places, tears partly away with the placenta. The tissue of the placenta is red and shows the usual spongy structure. The wall of the body of the uterus is very thin and measures in places not more than .3 cm. in thickness. In the lateral part of the uterus the wall measures up to 2.5 cm. in thickness. The musculature of the uterus is edematous.

Microscopic—The villi of the placenta are of the usual size and are mostly lined with a well-preserved syncytium. The stroma of the villi is moderately cellular and shows a moderate number of blood vessels. The decidua is very thin in places; in other places no decidua can be demonstrated. The villi are in direct contact with the musculature of the uterus especially in the thinnest parts of the wall. The cells of the interstitial connective tissue of the musculature of the uterus are larger than usual.

Diagnosis.—Subtotal resection of the left fundi-uteri in a case of duplex uterus with pregnancy in the resected fundus, placenta accreta.

Summary

A case of placenta accreta found in a case of duplex uterus at Cesarean section is presented with the pathologist's report of the uterus removed.

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A SURVEY OF LEPTOSPIROSIS (WEIL'S DISEASE) IN MINNESOTA

ABRAM B. STAVITSKY, M.S.P.H., Ph.D.* and ROBERT G. GREEN, M.S., M.D.

Minneapolis, Minnesota

IN RECENT years it has become increasingly evident that leptospirosis icterohemorrhagica, or Weil's disease, is not so rare a disease in the United States as was formerly thought. Until 1941 there were about twenty-seven fully described and twenty presumptive human cases of the disease in the literature.[2] However, in that year Larson[2] listed fifty-one previously unreported cases occurring in the United States and Puerto Rico between 1938 and 1941. This brings to ninety-eight the number of human cases that have been observed in Puerto Rico, the District of Columbia, and fourteen states, every area of the country being represented. Recent surveys of the animal population throughout the country[4,6] reveal that animals in the United States have about the same frequency of infection with a virulent strain of the spirochete as do animals in other parts of the world where the human disease is more common.[1]

Despite the apparent increase in the number of reported cases in man and animals throughout the country, there have as yet been no cases of the disease established in Minnesota.[3,5] It was therefore believed worth while to inquire into the presence or absence of the etiological agent of leptospirosis, *Leptospira icterohemorrhagiae*, in certain groups of the human and animal population in and around Minneapolis and Saint Paul. Three groups of the human population were included: clinically suspected luetics, confirmed

From the Department of Bacteriology and Immunology, University of Minnesota. A preliminary report of this work was given at a meeting of the North Central Branch of the Society of American Bacteriologists at Ames, Iowa, May 8, 1942.

*Present address: School of Veterinary Medicine, University of Pennsylvania, Philadelphia, Pennsylvania.

TABLE I. SUMMARY OF SURVEY OF LEPTOSPIROSIS IN MINNESOTA

Source of Material	No. Examined	Method of Diagnosis DF	AGG	INOC	Positive Results DF	AGG	INOC	Percentage Positive
Human beings	196	196	196	50	0	0	0	0
Suspected cases of leptospirosis	4	4	4	4	0	0	0	0
Suspected cases of lues	143	143	143	26	0	0	0	0
Confirmed cases of lues	49	49	49	20	0	0	0	0
Dogs	20	20	20	10	0	3	0	15
Wild rats	22	22	0	4	4	0	4	18

DF —Dark-field microscopy.
AGG —Agglutination test.
INOC—Animal inoculation.

luetics, and individuals clinically suspected of having leptospirosis. The animals examined were wild rats and dogs. Samples of human whole blood, blood serum and urine were collected through the co-operation of the Dermatology and Syphilology Clinic and the Bacteriology Laboratory of the University Hospitals, Minneapolis. Blood, urine, kidney and liver were obtained from wild rats trapped at the Saint Paul city dump and from dogs used in experimental work by the Department of Surgery of the University of Minnesota. All samples were examined by direct dark-field microscopy for morphologically characteristic, actively motile spirochetes and were inoculated into young white guinea pigs. The microscopic agglutination test for the diagnosis of leptospirosis as described by Schuffner and Mochtar[7] was performed on all of the blood sera. Table I summarizes the results of these studies.

All tests on human material were negative. Evidence of present infection of four rats with actively virulent leptospirae was obtained by direct dark-field observation and animal inoculations of minced rat kidneys. The organisms isolated by culture of the infected kidneys of inoculated guinea pigs proved to be morphologically identical with and immunologically very similar to strains of the spirochete isolated in other parts of the country. Evidence of past infection of three dogs was secured by means of positive agglutination tests of their sera against *Leptospira icterohemorrhagiae* in significant titers of 1:300, 1:200 and 1:100. All other tests on the dogs were negative.

So far as we know, this is the first evidence of the presence of actively virulent *Leptospira icterohemorrhagiae* in the animal population in Minnesota. Thus far we have not succeeded in procuring evidence of past or present human leptospiral infection in this area.[3,5] However, it seems logical to assume that human cases of Weil's disease might well occur in Minnesota inasmuch as there is an adequate animal reservoir for the spirochete in the rat, dog and possibly other animals. Moreover, the disease is readily transmissible by contact with or ingestion of moist soil and food contaminated with rat urine and feces. Sewer workers, fish cleaners, and workers in damp mines, ditches and tunnels would be particularly liable to infection.

It may be pointed out that only 50 per cent of the cases of Weil's disease present jaundice[9], while a number of cases take the form of a relatively benign meningitis with none of the classical symptoms of leptospirosis other than a positive agglutination test.[8] In the latter type of case ordinary bacteriological studies usually fail to reveal the presence of the organism, as leptospirae do not grow on ordinary bacteriological media and are not stained by the more commonly used stains.

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ACUTE APPENDICITIS

A Study of the Cases Admitted to the Minneapolis General Hospital Over a Five-Year Period

JOHN V. FARKAS, M.D.
Minneapolis, Minnesota

THIS review of cases of acute appendicitis admitted to the Surgical Service of the Minneapolis General Hospital covers a recent period of five consecutive years.

The cases analyzed are limited to those which have definitely been proved by pathological examination, including microscopic sections, to have a diseased appendix as the offending organ of disease. The fifteen cases not operated upon were diagnosed as "Appendiceal abscess due to acute appendicitis with perforation." These cases were later re-admitted for an interval appendectomy, but the subsequent hospital admissions are not included in this study. Those patients clinically diagnosed as acute appendicitis but subsequently proved to have nonpathological appendices, as well as those from which normal appendices were removed for any reason, such as appendectomy concomitant with gynecological procedure, are not included in this group.

Incidence and Age

During this five-year period 665 cases were admitted. The extremes in age range are from two years (male, with a gangrenous appendix) to seventy-six years of age. The age distribution is represented in Chart 1.

Chart 1 clearly shows that appendicitis is a disease of youth, over 70 per cent of all cases occurring in the second and third decades of life.

TABLE I. SEX DISTRIBUTION

Decade	0-9	10–19	20–29	30–39	40–49	50–59	60–69	70–79	Total
Male	23	133	89	49	22	27	8	3	354
Female	25	163	84	21	10	4	4	0	311

Sex Distribution

Of the total number, 354 cases (53.2 per cent) were in males, while 311 cases (46.8 per cent) occurred in females. Although there were more cases in the entire group, numerically speaking, in males, there was a greater incidence of the disease in females in the earlier periods of life.

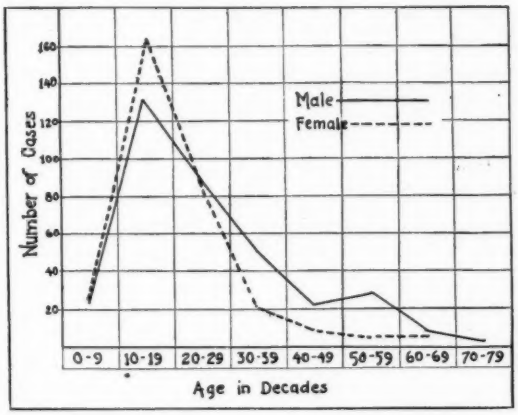

Chart 1.

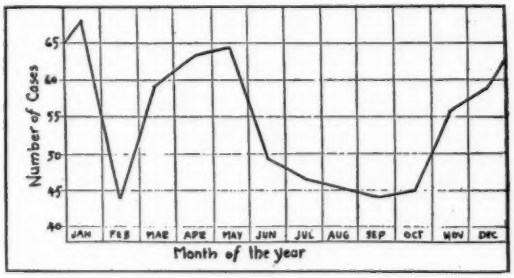

Chart 2.

Seasonal Variation

The graph in Chart 2 shows two seasonal peaks, one occurring in midwinter and the other in midsummer. The significance of this curve is not readily apparent. There was no noticeable association between acute upper respiratory infections and acute appendicitis.

Duration of Symptoms

In 469 individuals found to have acutely inflamed appendices without perforation, the average duration of symptoms prior to admission to

From the Department of Surgery, Minneapolis General Hospital, Minneapolis, Minnesota. 1944.

the hospital was 25.6 hours. The time elapsing varied in extreme range from one and one-half hours to seventy-two hours. Patients found at operation to have perforated appendices gave histories of symptom-durations varying from two hours to ten days, an average of 49.05 hours.

In patients who, on initial examination at the time of admission, were found to have easily definable masses the average duration of symptoms was 6.4 days, varying in extremes from two days to seventeen days.

Treatment

It is not the purpose of this review to discuss the relative merits of various methods of treatment of acute appendicitis. At this clinic, the sound adage "appendicitis is a surgical disease" is strictly followed.

Of the 665 cases herein considered, 648 were treated surgically. Of the seventeen patients not operated upon, fifteen were patients with large masses in the right lower abdominal quadrant and in whom bodily defense mechanisms seemed to be controlling the disease adequately. The remaining two were an eleven-year-old female who on admission was extremely ill, having a temperature orally of 104° F. and who expired on the third day of hospitalization, and a seventy-six-year-old male admitted in a moribund condition, expiring on the same day.

Appendectomy was performed in all but eight of the patients treated surgically. In those cases in which the appendix was not removed, a well-defined abscess was encountered and incision of the abscess was performed.

A muscle-splitting incision of the McBurney type was used in 524 of the 648 surgical cases. Rectus muscle incisions were utilized in 120 instances, seventy-nine of these being in females.

The stump of the appendix was inverted in less than half the cases. There was no apparent difference postoperatively between those cases in which the stump was inverted and those in which inversion of the stump was not performed.

In nearly all cases, including those complicated by perforation of the appendix, the wound was closed without the use of drains. Only those with abscess formation were closed with drainage. Peritonitis without abscess formation was not used as indication for drainage. In this group of cases, sulfonamides orally or intravenously were administered postoperatively in full therapeutic doses.

Sulfonamides sprinkled intraperitoneally were used uncommonly and never in amounts to exceed five grams. No cases of jaundice were noted in those which were treated with intraperitoneal sulfonamide drugs.

In many cases, peritonitis, as diagnosed clinically, was not confirmed at surgery, although in no case were clinical signs of peritonitis absent when peritonitis was observed at operation.

The use of morphine sulfate administered subcutaneously prior to surgery was a helpful aid in more clearly interpreting the true pathological state by eliminating voluntary muscle spasm.

Anesthesia

Spinal anesthesia was the method of choice. Of the 395 cases of anesthesia via the spinal route, the usual agents employed were procaine crystals dissolved in spinal fluid, metycaine solution, and 4 per cent solution of pontocaine snow (dissolved in three per cent solution of glucose in triple distilled water). The spinal method was used for anesthesia in seventy-one patients between fourteen and seventeen years of age, in those who were emotionally stable enough to cooperate. The results obtained in those younger individuals were excellent.

In a few instances it was necessary to control apprehension during the operative procedures by means of supplementary light general anesthetics. For this purpose a small amount of sodium pentothal administered intravenously or nitrous oxide by inhalation were found to be the adjuncts of preference. Nausea alone during operation was combatted successfully almost invariably by the administration of pure oxygen inhalation for a few minutes at a time.

General anesthesia was employed in 248 cases: ether by inhalation, preferably by the open method for children; cyclopropane and ethylene-ether-oxygen in most instances, for adults.

Local infiltration of 1 per cent procaine solution was used for anesthesia in five cases including an eleven-year-old female suffering from an associated upper respiratory infection, and a sixty-nine-year-old male with advanced generalized arteriosclerosis.

Hospitalization Time

It is interesting to compare the duration of hospital days required for the different types of incisions for appendectomy. In cases uncomplicated by perforations of the appendix or by post-

TABLE II. HOSPITALIZATION TIME

Type		Average number of hospital days
Non-perforated	McBurney incision	7.3
	Rectus incision	11.3
Perforated		19.4

operative complicating circumstances, the hospitalization duration for cases in which the McBurney type of incision was used averaged 7.3 days; those individuals in whom a rectus type of incision was performed required an average of 11.3 days hospitalization.

Patients whose courses were complicated by perforation of the appendix (including those with abscesses treated conservatively) necessitated an average period of hospitalization of 19.4 days.

Pathology

In this series all of the cases in which the appendices were removed, the specimens were examined grossly and microscopically by the hospital staff pathologists. Cases reported by the pathologist as "interval appendix," "subsiding appendicitis," "peri-appendicitis" or similar diagnoses are not included here. This survey includes only those cases which were diagnosed pathologically as "acute suppurative appendicitis," "gangrenous appendicitis," and "gangrenous appendicitis with perforation."

Abscess formation in cases complicated by perforation numbered forty-seven, the abscesses varying in size from small abscesses at the site of perforation to large palpable masses containing several ounces of pus. In two cases there were multiple small abscesses involving the omentum.

In 194 instances (including the eight cases of abscesses not operated upon) there was evidence of perforation. This seems to be an alarmingly high figure of 29.1 per cent of the total number of cases included in this discussion. But when it is reflected that the average duration of symptoms of patients with perforated appendices was longer than forty-nine hours before seeking medical attention, then it is readily conceivable why there should be a relatively high incidence of perforations in diseased appendices in patients of the class usually seen in institutions such as this.

Despite the fact that there were a comparatively large number of perforations, severe peritonitis was noted in only a few cases. In many instances it was surprising to find the peritoneum normal in appearance when clinically peritonitis was strongly suspected.

TABLE III. POSTOPERATIVE DEATHS

Case	Sex	Age	Days Postoperative	Diagnosis
1	M	2½	8	Acute appendicitis, perforated, Generalized peritonitis Pneumonia
2	F	12	16	Perforated acute appendicitis Generalized peritonitis Bronchopneumonia
3	M	15	2	Perforated gangrenous appendicitis Generalized peritonitis
4	F	15	10	Perforated gangrenous appendicitis Generalized peritonitis
5	M	21	12	Perforated acute appendicitis Generalized peritonitis
6	M	58	4	Perforated gangrenous appendicitis Generalized peritonitis Pneumonia
7	M	74	4	Perforated gangrenous appendicitis Generalized peritonitis Pneumonia
8	M	26	13	Gas gangrene of abdominal wall Perforated gangrenous appendicitis Generalized peritonitis
9	M	74	4	Pneumonia Generalized peritonitis Acute suppurative appendicitis with perforation
10	F	21	8	Pulmonary embolism Acute suppurative appendicitis
11	M	27	Died suddenly during operation	Acute suppurative myocarditis Acute suppurative appendicitis

Bacteriology

Cultures for bacteriological study were made in fifty-three instances of appendicitis associated with peritonitis due to perforation of the appendix. Of this number, forty-five were positive for bacterial growth and nine were negative. In eighty cases cultures were obtained from the peritoneal contents of those patients with clinical signs of peritonitis, but in whom no perforation of the appendix was found at operation. Of these, sixty-six were negative and only fourteen were positive for bacterial growth. In both groups the organisms cultured were the usual inhabitants of the intestinal tract, with E. Communis, E. communior, and nonhemolytic streptococci predominating.

Mortality

There were thirteen deaths in the entire series; eleven of them were postoperative. This gives a mortality rate of 1.94 per cent for the entire group and a rate of 1.65 per cent for the postoperative deaths.

Nonsurgical Deaths

1. An eleven-year-old female admitted in a severely acutely ill condition with a temperature of 104° F. died on the third hospital day. Autopsy revealed a perforated gangrenous appendix with generalized peritonitis.

2. A seventy-six-year-old male admitted in a moribund condition; death occurred on the same day. Autopsy revealed a perforated gangrenous appendix with generalized peritonitis.

Postoperative Deaths

In the postoperative deaths, all except two were in cases having perforated acutely infected appendices and generalized peritonitis.

Complications

Postoperative complications other than urinary retention included the following:

1. Pulmonary atelectasis. Two cases, both males, aged thirty-five and forty-eight years. Both patients had received general anesthetics.

2. Subphrenic abscess. One case, male, aged twenty-three; drainage of abscess surgically.

3. Wound infections. Subcutaneous abscesses (in other than patients with wounds closed with drainage tubes). Twelve cases.

4. Postoperative wound evisceration. One case, male, aged sixty-nine years, following appendectomy through a rectus incision; secondarily sutured.

5. Large pelvic abscess. One case, female, fifteen years of age, following removal of a perforated gangrenous appendix.

In addition, there were other complications not postoperative, such as:

Acute appendicitis complicating pregnancy.—Two cases, patients aged twenty-one and twenty-three years. Uneventful courses.

Acute appendicitis complicating puerperium.—One case, patient aged thirty-two, two weeks postpartum. Uneventful convalescence.

Meckel's diverticula.—Two cases, both adult males. Removal of noninfected appendix in each case.

There were no deaths in this group.

Conclusion

This study is respectfully submitted with the intent, not to present uninteresting tables and collections of monotonous statistics, but to endeavor to present concise summaries of various aspects in the little-understood disease of appendicitis which still claims a grim toll of many thousands of lives each year.

PULMONARY METASTASIS OF CARCINOMA DIAGNOSED BY BRONCHOSCOPY

WILLIAM S. TINNEY, M.D. and JOHN R. McDONALD, M.D.
Rochester, Minnesota

THE lungs are frequently the site of metastatic lesions from malignant tumors arising elsewhere in the body. Usually the metastatic nodules produce multiple, well-defined lesions in the parenchyma of the lung and rarely give rise to pulmonary symptoms unless there is extension to the pleura with development of pleural effusion. In the absence of any demonstrable primary tumor, it occasionally may be difficult to distinguish these secondary lesions from primary bronchiogenic carcinoma situated in the periphery of the lung. In recent years, thoracic surgery has developed so rapidly that it has become relatively safe to perform pneumonectomy for the removal of primary tumors of the lung. It is, therefore, essential that primary tumors be distinguished from secondary tumors of the lung. The most important criterion for such differentiation is the presence or absence of bronchial obstruction. However, the belief that metastatic pulmonary lesions never involve the bronchi is erroneous. Large metastatic tumors in the parenchyma of the lung may extend directly into the wall of a bronchus and ulcerate through the mucosa or the bronchial mucosa may be the site of direct metastasis. In either case the intrabronchial lesion may become large enough to obstruct completely the bronchus and

From the Division of Medicine (Tinney) and the Division of Surgical Pathology (McDonald), Mayo Clinic, Rochester, Minnesota.

cause atelectasis of that portion of the lung distal to the obstruction. As a result, the clinical signs and symptoms and the roentgenographic findings may be indistinguishable from those produced by primary bronchiogenic carcinoma.

Weiss has discussed the differential diagnosis of primary and secondary carcinoma of the bronchi. Many of the reports in the literature of secondary malignant lesions in the bronchi have been of cases of hypernephroma. Vinson and Martin reported a case of hypernephroma with pulmonary metastasis in which the diagnosis was made on bronchoscopic examination. In Clerf's case of melanoma a large growth in the left bronchus and trachea was removed bronchoscopically. Farrell observed that occlusion of the bronchus by a metastatic lesion on the wall was uncommon. In one of his cases the lesion was secondary to a melanoma. Maytum and Vinson reported a case of hypernephroma with pulmonary metastasis and ulceration into a bronchus, in which the pulmonary lesion simulated primary carcinoma of the bronchus. Barney and Churchill reported a case of adenocarcinoma of the kidney with metastasis to the lung. Nephrectomy and later lobectomy were performed and the patient was living and well five years after the lobectomy. In Bosse's case of teratoma of the testis, several small metastatic nodules were found to encroach on the lumen of the right main bronchus. Betts obtained tissue for biopsy through the bronchoscope in two cases in which the tumors were not bronchiogenic in origin. One was a lymphoma. The second was a metastatic implant from a melano-epithelioma of the eyelid. Raine reported a case in which right pneumonectomy was performed for an intrathoracic tumor nine months after resection of carcinoma of the sigmoid. The tumor of the lung was found to be a metastatic lesion. Freedlander and Greenfield reported two cases in which metastatic tumors invaded the bronchi; the presenting symptom in these cases as in primary bronchiogenic carcinoma was hemoptysis. In both cases the diagnosis of carcinoma was made by biopsy of tissue obtained bronchoscopically. King and Castleman studied 109 cases of metastatic carcinoma of the lung and found that in twenty cases infiltration of the bronchial wall or mucosa had occurred.

We are presenting three cases of carcinoma in which a metastatic lesion involved the mucosa of the tracheobronchial tree. None of these cases has been reported previously.

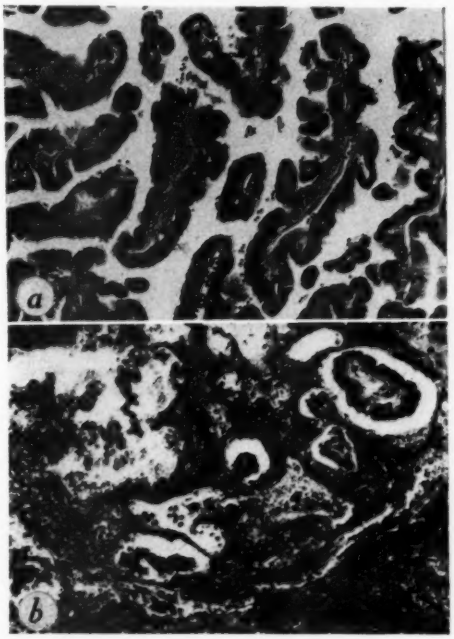

Fig. 1 (Case 1). Papillary adenocarcinoma: *a*, of the thyroid gland; the papillae are evident (x100); *b*, of the trachea; the papillary nature of the lesion is similar to that shown in *a* (x130).

Report of Cases

Case 1.—A man, sixty-four years of age, came to the Mayo Clinic in August, 1938, because of a sensation of pressure in his throat and difficulty in breathing. These symptoms had started four weeks previously. On physical examination at the clinic a firm, nodular enlargement of the thyroid was found and cyanosis of the face, stridor and a nonproductive cough were noted. Partial thyroidectomy was performed for an extensive carcinoma of the thyroid. The carcinoma measured 7 by 4 by 2.5 cm. The external surface of the thyroid appeared somewhat nodular. On the cut surface, no definite adenomas were apparent and the entire thyroid was grayish in color. There were a few areas of brownish discoloration suggestive of old hemorrhage. The surface was friable and appeared moth-eaten. Histologically, typical papillary adenocarcinoma, grade 1 (Fig. 1*a*), was present. The epithelial cells were arranged on connective tissue stalks. An occasional mitotic figure was seen. There was invasion of the veins. Following thyroidectomy, the lesion was treated with radium.

The patient's course was satisfactory until May, 1940, when hemoptysis and dyspnea developed. On bronchoscopic examination a small nodular lesion was

found on the anterolateral wall of the upper third of the trachea. Histologic examination of tissue from this lesion showed it to be a papillary adenocarcinoma, grade 1. The morphologic features of this carcinoma were identical to those demonstrated in the thyroid (Fig. 1*b*).

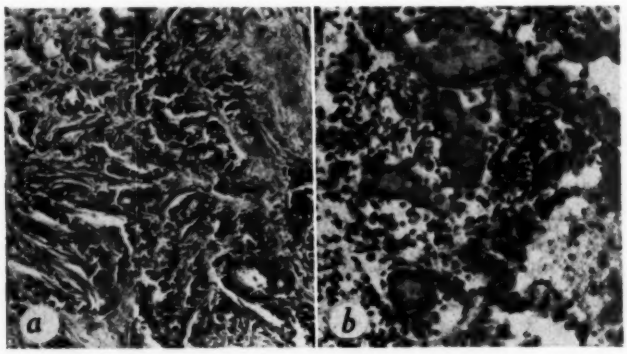

Fig. 2 (Case 2). Fibrous adenocracinoma: *a*, of the breast (x95); *b*, of the bronchus (x155).

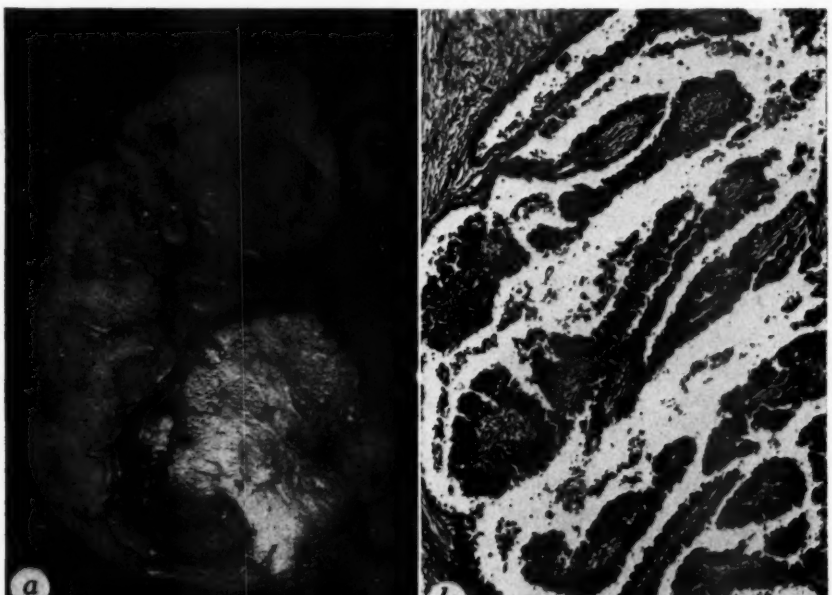

Fig. 3 (Case 3). Hypernephroma of kidney: *a*, specimen, *b*, a papillary type carcinoma is evident (x70). evident (x70).

Case 2.—A woman, sixty-four years of age, came to the Mayo Clinic in November, 1938, because of a mass in the left breast. She had noticed the mass four months before admission and during this time it had become larger. The tumor was found to be attached to the skin. Radical mastectomy was performed. The pathologist found, 3 cm. from the nipple, a rounded nonencapsulated mass which on section was whitish and firm. Microscopic examination revealed fibrous adenocarcinoma, grade 3 (Fig. 2*a*). The cells were forming a few acini but for the most part were fairly anaplastic.

The patient remained asymptomatic until November, 1941, when she noticed a sensation of tightness in the left side of the thorax, a nonproductive cough and wheezing. At bronchoscopy the left lower lobe bronchus was narrowed. Examination of tissue removed from

this bronchus revealed adenocarcinoma, grade 3 (Fig. 2*b*), which was similar in appearance to the carcinoma which had been found in the breast.

the major bronchi and vessels of this left lung, was a grayish tumor mass measuring 5.5 by 4 by 3.5 cm. (Fig. 4*a*). There was involvement of the peribronchial lymph

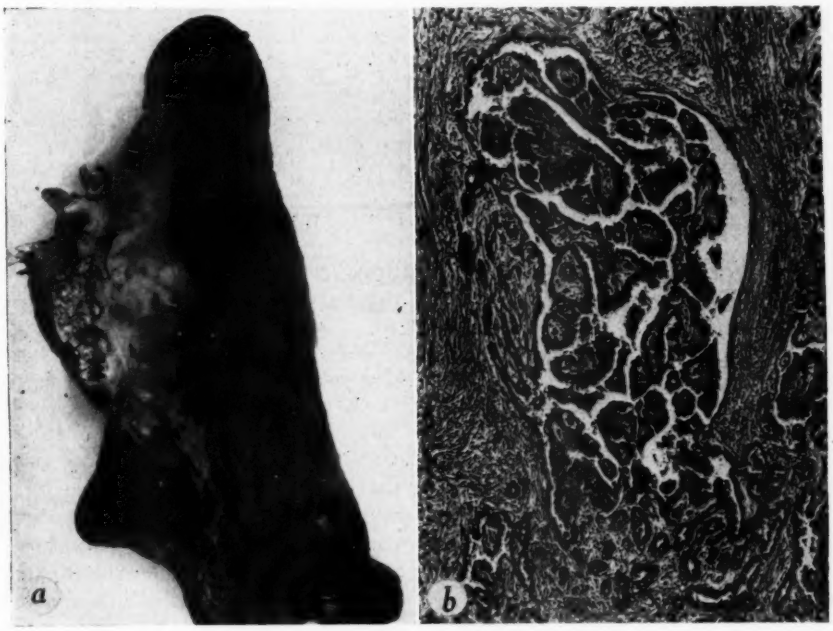

Fig. 4 (Case 3). Metastatic hypernephroma of the lung: *a*, the carcinoma involves the larger bronchi; *b*, the configuration of the tumor cells is identical with that of the lesion in the kidney (Fig. 3; x 60).

Case 3.—A woman, thirty-nine years of age, was admitted to the Mayo Clinic in July, 1938, because of hematuria which she had noticed for nine months. An excretory urogram revealed a filling defect in the pelvis of the right kidney with apparent cortical necrosis. Clinical diagnosis of neoplasm in the right kidney was made and right nephrectomy was performed. Situated in the lower pole of the right kidney was a grayish tumor measuring 6 cm. in diameter. There was tumor thrombosis of the renal vein in the hilus of the right kidney (Fig. 3*a*). Histologic examination revealed hypernephroma. The neoplastic cells were, for the most part, dark staining; a few clear or lipoid-filled cells were present, however. The neopastic cells were grouped in the form of papillae with a connective tissue stalk (Fig. 3*b*). About 30 per cent of the renal substance was destroyed and a small vein was involved.

The patient remained asymptomatic until July, 1940, when pain in the right thorax, progressive nocturnal dyspnea, cough and hemoptysis developed. On bronchoscopic examination a large tumor was found in the left upper lobe bronchus. Biopsy of this lesion revealed hypernephroma which demonstrated similar morphologic characteristics to those seen in the kidney. Left pneumonectomy was performed. Surrounding all nodes. The entire lung showed marked atelectasis. Microscopically, this neoplasm was composed of hyperchromic cells arranged in a separate formation similar to that seen in the kidney (Fig. 4*b*). The patient was last seen at the clinic in November, 1944, at which time there was no evidence of further metastasis or of recurrence of the tumor.

Comment

Three cases have been described in which a metastatic lesion ulcerated through some portion of the tracheobronchial mucosa. Case 1 is probably an example of direct invasion of the trachea by carcinoma of the thyroid. Case 2 is an example of carcinoma of the breast with metastasis to the bronchial mucosa. Case 3 is the most interesting one in this series. The metastatic lesion in the lung was diagnosed two yers after nephrectomy for hypernephroma. There was no evidence of recurrence or metastasis four years after pneumonectomy for the metastatic tumor. In all of our cases, metastasis to the tracheobronchial tree was diagnosed on bronchoscopic examination and

biopsy of tissue obtained bronchoscopically confirmed the diagnosis.

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MULTIPLE MALIGNANT ARGENTAFFIN (OR CARCINOID) TUMORS OF THE SMALL BOWEL WITH DISSEMINATED METASTASIS

C. E. WATZ, M.D.
Saint Paul, Minnesota

CARCINOID tumors arise from the Kultschitzky or argentaffin cells of the crypts of Lieberkühn. These cells are found throughout the gastro-intestinal tract but are more abundant in the appendix and terminal ileum. They are called argentaffin cells because of their ability to reduce solutions of ammoniacal silver.

Carcinoids were first described by Lubarsch in 1888. Only recently has it been recognized that this tumor may produce clinical symptoms and assume all the properties of malignant growths. Carcinoids represent 23 per cent of all malignant neoplasms of the small bowel.

Prior to 1930, 104 cases of carcinoid of the small intestine had been reported. Cooke added eleven cases to this, and from 1930 to 1939, Ariel reviewed the literature and collected 111 more cases which with his own brought the number to 237. Obstruction was the most common finding, occurring in 24 per cent of the 237 cases. From 1906 to 1943, the Mayo Clinic reviewed 130 small bowel tumors. Of these, thirty were carcinoids.

The prognosis is better than in adenocarcinoma. They are slow in evolution with usually a long pre- and postoperative phase and a surprisingly long survival. In eleven cases at the Mayo Clinic, deaths occurred from local recurrences and metastasis two and five years after operation, the remaining nine being well after ten to nineteen years. It appears that even liver metastases remain stationary for years after removal of the primary growth. Cameron stated that no less than 33 per cent are alive eight years after operation for metastasizing carcinoid. Simple palliative ileo-colostomy for relief of obstruction without removal of the growth may allow the patient to live for years in comfort. In some cases spontaneous perforation proximal to the obstructing carcinoid has been recorded. The age of incidence is thirty-nine to seventy-eight, with an average of fifty-eight.

The history in these cases is usually that of a chronic intestinal obstruction with vague, periodic, intermittent, epigastric distress, at times with constipation or loose stools. In some, a mass is felt. Tarry stools or occult blood are not usually seen. Anemia is not usually present: In many reported cases, carcinoid was unexpectedly found at operation or at autopsy.

The pathologic report is usually adenocarcinoma of the carcinoid type. These tumors may be related to basal cell carcinomas. Mitotic figures are only rarely seen; grossly they are yellow but are often orange in color and are multiple. In a review of 152 cases by Humphreys, 30 per cent were multiple, and the tumor nodules numbered from two to ten. In the appendix, lesions are usually solitary.

Metastases are present in 25 to 43 per cent of the cases and spread, as do ordinary carcinomas, through the lymphatics. In some cases invasion of veins has occurred. Metastases usually occur in the regional lymph nodes, mesenteric fat and the liver. In recent reported cases more distant metastases have not been present.

These tumors occur five times as often in the appendix as the ileum. They are more rarely found in the colon, stomach, duodenum or jejunum and rectum. In routine appendectomies it is revealed that approximately one in 200 to 500 appendices has carcinoid present.

Case Report

On May 6, 1944, I saw a fifty-three-year-old female with a three months' history of epigastric pain, spells of vomiting, diarrhea, weakness, 33-pound weight loss and a large subcutaneous mass just above the left posterior iliac crest. The mass was firm and fixed and measured about 4 by 3 inches and was raised about 1 inch from the surface of the flank. About the time of admission to the hospital, May 10, 1944, two other subcutaneous tumors had appeared. Tarry stools were noted only twice. Urinalysis was normal, hemoglobin 7.5 Gm., sedimentation rate 65 mm. in one hour, white blood count 12,200. Stools were 4 plus for occult blood on two occasions.

Examination revealed an emaciated, pale, white female with a complaint of abdominal distress. No masses were felt. Loud intestinal borborygmi were easily heard, and at times could be heard without the aid of the stethescope.

X-ray studies by Dr. J. Richards Aurelius, Roentgenologist of the Midway Hospital, revealed the following:

"Abdomen: Plain film of the abdomen shows small amounts of gas in the left midabdomen which are evidently in the small bowel and may indicate jejunal stasis. This lies in the area of a rounded soft tissue mass of about 10 cms. in diameter seen slightly above the crest of the left ileum. The kidney shadows appear to be normal in size, with the left kidney normal in position. The right kidney is moderately low. Multiple facetted stones which are evidently in the gall bladder are seen lying to the right of the third, fourth and fifth lumbar vertebrae. The psoas muscle shows normal definition on the left and is probably obscured on the right by the kidney and gall-bladder shadows. Barium enema study: Barium enema study shows a negative colon and terminal ileum. There is no evidence of association of the colon with the mass in the left flank. A localized collection of gas is again demonstrated in apparently the jejunum at the level of this mass and suggesting stasis."

The patient was seen by Dr. N. Logan Leven, and I include his consultation note, dated May 13, 1944:

"Mass in left lumbar region probably is fibrosarcoma or some type of malignant tumor.

"Cannot say what the lesion is in the small bowel, but believe there are intra-abdominal metastases.

"Would suggest excision of lesion in the left lumbar region. This might clear up diagnosis and rule out further surgery. If not, an exploration of the abdomen is indicated, but probably will show a lesion too widespread to help."

The flank tumor was removed, and a diagnosis of adenocarcinoma of the carcinoid type was made.

After three transfusions, the abdomen was opened through a left upper mid-rectus incision, May 22, 1944. Four tumors of the upper jejunum were found. The most proximal one involved in an intussusception was reduced. The involved bowel was then excised making an end-to-end anastomosis. Many large metastatic glands of the regional mesentery were excised with the involved bowel. There was no evidence of other abdominal extension or liver metastasis and no evidence of other small bowel tumors on examination.

The postoperative course was uneventful. There was persistence of loose stools, weakness and pallor. The patient was now able to eat better, although she had some vomiting spells and had the appearance of a malignant cachexia. It was of interest that the remaining subcutaneous tumors seemed smaller than they were before operation.

The patient was discharged from the hospital on June 3, 1944, twelve days after operation. Three weeks later, she returned to the hospital, and on this admission she had a complete small bowel obstruction and a hemoglobin of 6 Gm. A tentative diagnosis of small bowel obstruction due to adhesions was made. Nasal suction for decompression of the small bowel was done. The abdomen was reopened on June 26, 1944, at which time a small bowel tumor six feet from the ileocecal valve had become involved in an intussuspection. This bowel was resected and section revealed another small bowel tumor of the carcinoid type. Eighteen days later the patient was discharged from the hospital. She returned to her home in the country.

Dr. J. Halpin, Rush City, Minnesota, her family physician, reported to me that she had developed a tumor in the left axilla. Another mass appeared over the right shoulder, and by August 23, 1944, three months after the first abdominal operation, a large mass had appeared in the left abdomen (apparently a recurrence in the jejunal mesentery or liver metastasis). Progress was downhill, and the patient died of cachexia, October 15, 1944, or eight months after onset of symptoms. Autopsy was not granted.

Summary

A case of multiple malignant tumors of the small bowel with intussusception and obstruction, with metastases to regional lymph nodes, left axilla, right shoulder (subcutaneous region) and left flank (subcutaneously) is reported. There were no gross liver metastases or other abdominal metastases at the time of the laparotomy. Three subcutaneous tumors associated with the present illness appeared. The largest of the three was removed, with a microscopic diagnosis of metastatic carcinoid, identical with that of the jejunal new growths. Microscopic section first made was diagnosed adenocarcinoma and later diagnosed by the pathologist as adenocarcinoma of the carcinoid type.

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CLINICAL-PATHOLOGICAL CONFERENCES

TUMORS OF THE BREAST

E. T. BELL, M.D.

Saint Paul, Minnesota

DR. BELL: I want to talk to you on the tumors of the breast. This topic is almost as inclusive as diseases of the breast because almost all diseases of the breast appear as a tumor or, at least, as an indurated mass in the breast. I used to teach the diseases of the breast to medical students on the basis of carcinoma, adenocarcinoma, et cetera, but some years ago, when I took part in a tumor clinic it dawned on me that the one way to approach this subject is from the standpoint of the patient. The presenting symptom is a mass in the breast. We study the clinical features of the mass and then determine how to proceed to an accurate diagnosis.

First, I wish to speak about the normal breast. A breast of a young girl before puberty is small. It has not undergone puberty hypertrophy. It consists of just a few large ducts. As you look at the microscopic sections, you would hardly be able to recognize it as a breast. Before puberty, we have nothing but ducts. No acini have formed. A senile breast in a woman many years past the menopause may not be fatty, but shrunken and fibrous. The acini are few and atrophic. A breast of late pregnancy has very large lobules with large ducts going to the lobules. The one thing I want to stress is that benign tumors in the breast retain a lobular arrangement. This is the most important feature of benign tumors. Malignant ones lose their lobular arrangement. If you take the breast between your fingers, it feels lumpy. If you feel it with the flat of the hand it does not feel lumpy. In a high-power view of a small lobule, milk is seen being formed in the epithelium of the breast. A breast of lactation looks like a lung microscopically. You can see the droplets of milk in the cells. The pathologist has to be familiar with this in studying breast disease. Uneven atrophy of a breast after pregnancy and lactation is a thing of considerable importance in diagnosis. After the end of lactation, the breast recedes to the resting stage and often does it unevenly. An uneven retrogression produces a lumpy breast. Still you can avoid mistakes by using the flat of the hand, but if you pick it up you can easily feel masses. Uneven atrophy is apt to occur after repeated pregnancies.

In the diagnosis of breast tumors, the clinical approach is, I think, much better than the approach through the study of types of diseases which pathologists recognize. The first thing to impress on anyone who is not familiar with this is that on examining the breast one must use the flat of the hand and not pick up the breast between the fingers. What you can pick up between your fingers is not a tumor unless you can feel it with the flat of the hand. Either use the flat of the hand to find lumps after inspection or use the tips of the fingers, but you must not pick up the lump to determine whether it is a tumor.

The most common tumor in the breast is a single, well-defined mass, felt with the flat of the hand. The most common form is one lump in one breast. The next point is whether or not it is adherent to the skin. All of you know how that can be demonstrated. Often you can see the dimpling of the skin. It is demonstrated by pushing the skin on either side with the tumor in the center and making the lump slip backward and as it pulls the skin with it, it causes the dimpling. If you can show that the lump is adherent there are ninety-nine chances out of one hundred that it is scirrhous carcinoma, and one chance in one hundred that it is benign. After you have demonstrated that it is an adherent mass in the breast (some are not adherent to the skin but to the deep fascia), you do not make very many mistakes, if you do a radical mastectomy. You would occasionally be wrong. It might be fat necrosis, but in that case it would be small, superficial and adherent to the skin. Tuberculosis of the breast may be adherent, but tuberculosis is very rare in the breast. Tubercles containing giant cells and epitheloid cells are found in the breast in mastitis due to milk escaping from the ducts into the breast. In some cases of mastitis, the breast is adherent to the skin, but this is very unusual. If one wants to be 100 per cent safe, he should remove the lump, cut in with a knife and examine. Scirrhous carcinoma, ninety times out of one hundred, can be recognized grossly.

I remember an interesting case of a woman who had an adherent mass in her breast which the surgeon thought was carcinoma, and I thought it was carcinoma, also, and advised radical mastectomy. The woman objected. She had a sister who had a similar mass removed which proved to be a mastitis. Since the patient insisted, the surgeon took out the lump and it proved to be mastitis and not carcinoma. She was saved from a radical mastectomy by her own insistence. If the lump is not adherent, the chances are about even that it is benign. The younger the woman the less chance that it is malignant. A lump in the breast of a woman under twenty-five is very likely a benign tumor. A tumor in a large breast and well away from the skin may be a scirrhous carcinoma. Medullary carcinoma is never adherent. It may be

From The Charles T. Miller Hospital, Saint Paul, Kano Ikeda, M.D., Pathologist.

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mistaken for a benign tumor. A nonadherent lump should be removed and examined microscopically, since a great many are benign. If a nonadherent mass has the form of a lobule and extends from the nipple to the periphery, it is almost certainly benign and usually no operative procedure is necessary. It is either cystic disease or fibrous mastitis. Multiple nonadherent masses in one or both breasts are nearly always cystic disease or some form of mastitis. Rarely a carcinoma of the medullary type is spread through the breast but not adherent. Still more rarely it is multiple fibroadenoma. Sometimes we see a half dozen or more fibroadenomas in one breast. Of course, if it is fibroadenoma you can get a pretty good idea clinically because it is so freely movable. Multiple adherent masses are carcinoma. Paget's disease of the nipple is a stubborn dermatitis of the nipple which may spread on to the aerola. Sometimes it has a fluid discharge and will not respond to the usual form of treatment. So, if you have a dermatitis of the nipple which will not respond to ordinary treatment, take a biopsy. You may find Paget's disease of the nipple.

Mastitis in the newborn occurs in either boys or girls. There isn't anything to the breast except the nipple. The nipple has a reddened area about it and the breast is tender and looks like there is an inflammation in it, and it may secrete a milklike fluid which is called witch's milk. The breast is stimulated in some way by an endocrine so that it secretes and gets hyperemic like an inflammation. There is no tumor in the breast of a newborn. Do not operate but apply a protective dressing and it will get well. Mastitis of puberty occurs in girls about the age of puberty and also in boys. It is a swelling of the breast tissue about the time the breast begins to develop. The nipple is in the center of it with an indurated area about the nipple and it feels like a button if taken between the fingers. It is red, hot, and tender. A symmetrically round area with the nipple in the center is characteristic. The breast is stimulated by estrogens or androgens, and it becomes congested and tender. You would be surprised at the number of times these are taken off of young girls with a diagnosis of carcinoma. We do not have carcinoma in the breast at the time of puberty. I have seen only one case of carcinoma of the breast in a girl at or before puberty. The mastitis may last for several months. It is seen in boys about thirteen or fourteen. No treatment is needed. Some parents become alarmed about it. Some surgeons remove the breast. This does not make much difference to a boy but it does to a girl. True mastitis usually occurs during lactation or late pregnancy, and has the usual phenomena of inflammation: redness, swelling, and increased heat. If seen independent of pregnancy or lactation, you are fairly sure it is not a mastitis, as mastitis is hardly ever seen except in lactation or pregnancy.

At times, what looks like mastitis in a nonpregnant woman is an acute carcinoma of the breast. Acute carcinoma of the breast shows a diffuse inflammation, reddening, tenderness, sometimes a fever and a leukocytosis. If seen in a woman with no history of pregnancy, it is probably an acute carcinoma of the breast. This is one of the most malignant of all forms of breast cancer. This is brought about by the fact that all lymphatics around the skin are filled with cancer cells.

Frequently the presenting symptom is a discharge from the nipple. Four varieties of this group may be recognized:

1. A bloody discharge with a palpable tumor. This is usually a carcinoma but may be a large duct papilloma. The tumor should be removed and examined.

2. A bloody discharge with no palpable tumor. In my experience this has never proved to be a carcinoma. It is usually a benign duct papilloma but it may be a simple ectasia of the large ducts. There is no harm in waiting and trying to determine from which quadrant of the breast the blood is coming. Sometimes the bleeding ceases spontaneously. I do not think that a papilloma changes into a carcinoma. If the bleeding continues you may be able to locate the bleeding area and take out one quadrant of the breast. A couple of years ago, there was a physician's wife who had a bloody discharge and no tumor. The consultants were conservative, and were trying to avoid unnecessary surgery. They could not find a tumor and tried to find out from what part of the breast the bleeding was coming. She was a young woman in her early thirties. She was followed for two or three months, and then the bleeding ceased and it has not recurred in two years. There is no harm in taking your time if there is no tumor palpable in the breast.

3. Serous discharge with a palpable tumor may be either a carcinoma or papilloma. The tumor should be removed.

4. A serous discharge without palpable tumor. I have examined several breasts removed because of these signs. They show either dilated ducts or a cyst draining into a duct. I am quite sure you do not have to do anything about this, unless the woman is worried and wants it removed. Sometimes an operation is justifiable if the woman is greatly worried. There is one woman who has been coming to me year after year for fourteen years. She started when she was twenty-eight. Her condition has always been the same, serous discharge and no lump palpable. I am satisfied that is not carcinoma. I am not worried about a breast where you can't find a tumor. I know a lot of doctors do not agree with this. If there is a tumor there is no argument. Those that bleed will usually have papilloma in the duct. Some are afraid it may become cancerous, but this has not been proven.

To give you a view of the age distribution of the lesions which are found in women with palpable masses in the breast, I show you some tables drawn from my own experience. There is one malignant tumor in a twelve-year-old girl and another in a girl eighteen years old (Chart 1). So we are almost safe in saying that anything under twenty is not malignant. If you have the clinical signs of malignancy in a young woman you should, of course, treat it as malignant. It is very likely that a lump in the breast of a woman under twenty is not malignant. The tumors are fibroadenomas

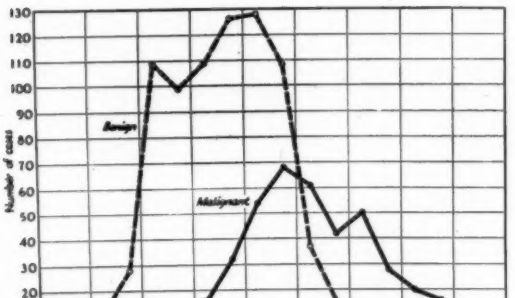

Chart 1.

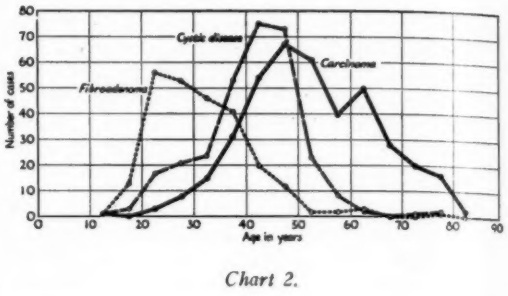

Chart 2.

and cystic disease. Even in the thirty- to forty-year group there is a great predominance of benign tumors. A lump in the breast of a woman between forty and fifty years of age has an even chance of being malignant. Between fifty and sixty years, the odds favor malignancy, in a ratio of 2 to 1, proportionately increasing as the woman gets older. I think you could say that if the woman is under twenty, malignancy is extremely unlikely. Under thirty, the chances are very great that it is benign. The older the woman, the more likely it is that the lump is carcinoma (Chart 2). If you take the benign conditions and separate fibroadenoma from cystic disease, fibroadenomas are most frequent in younger women. They reach their peak in the third decade and decline thereafter. Fibroadenomas are usually recognized rather easily clinically. They are usually single but occasionally multiple. They are freely movable in the breast. You can take your finger and push them around through the breast. They are hard. It is quite different from cystic disease or carcinoma. Fibroadenoma is the main tumor until after the age of thirty years. Then, cystic disease starts in. From forty to fifty is the peak of cystic disease. Fibroadenomas practically drop out entirely in women over sixty. Cystic disease is related to sexual life and disappears after the menopause. You hesitate in calling a thing fibroadenoma or cystic disease after the menopause. It is more likely a malignant disease.

Mastitis of pubery appears as a buttonlike induration of the breast with the nipple at the center. It is not more than 2 cm. in diameter. There may be local heat and tenderness. The mastitis of puberty is due to endocrine stimulation of the breast and should not be operated on. Mastitis of pregnancy and lactation is an acute or subacute inflammation which produces induration of the breast. There may be local heat and tenderness. Microscopically, tubercles are found which represent a foreign body reaction to milk which has escaped from the ducts. It is easily misinterpreted as tuberculosis. Never diagnose tuberculosis in the breast unless you have central necrosis or see tubercle bacilli. Tuberculosis of the breast is extremely rare. Fat necrosis comes from injuries to the breast. The lump is adherent to the skin and very superficial. An experienced man who has seen it before knows it from carcinoma. When cut, it is yellow and you see giant cells, epithelioid cells, fat cells, and fat necrosis. In chronic fibrous mastitis, the breast is indurated all over. It is just like a cake. You run your finger around the edge of the breast and it is round and hard. Grossly, it is very tough and fibrous. It looks like a scar tissue.

Cystic disease of the breast is one most common between thirty and fifty years of age. It is a nonadherent mass in the breast usually multiple but sometimes single, sometimes involving both breasts. It is also called Schimmelbusch's disease. I prefer cystic disease because that doesn't commit you to any etiology. It is related to the estrogenic function of the ovarian follicles. It only appears during sexual life from puberty to menopause. Large cysts may be seen with the naked eye. With the microscope we find other small cysts. The cystic lump cannot be moved about in the breast. It is not adherent to the skin or deep fascia. Multiple lumps make a diagnosis of cystic disease very probable. With a cystic mass, not adherent, you can sometimes insert a needle and drain the cyst. It may not be necessary to operate. The lump disappears and may not fill up for a long time. The disease usually tends to progress and more and more lumps develop and enlarge. They reach a maximum size and then remain stationary or regress. The best procedure is to remove the worst looking lump. If it shows cystic disease, no other operation is necessary. The breast remains lumpy but cancer develops no oftener than in a normal breast. Many people believe the breast should be removed because it might become cancerous. The risk of bilateral mastectomy is about as great as the risk of carcinoma. Cancer may develop in the cystic breast as in a normal breast. The patient should be observed from time to time. The patient should be told that other lumps may develop. Dr. O. J. Campbell followed 200 cases of cystic disease in women for five years or more. No cancer developed in these women. Simple cystic disease is due to dilatation or ectasia of the ducts. Adenocystic disease is the type which some call carcinoma. Some twenty-five years ago, many pathologists called this disease carcinoma and advised a radical operation. In adenocystic disease, there are multiple nonadherent masses in the breast which on section are solid and meaty looking. Use low magnification for the microscopic diagnosis.

If you notice lobulations like the breast of pregnancy with big ducts and secondary lobules, you know the growth is benign. There is a hyperplasia with a great many little ducts and acini. With the low power, the lobular arrangement is distinct. Under the high power, it looks like scirrhous carcinoma. In some laboratories, it is called grade 1 carcinoma. When this benign lesion is considered a carcinoma, the curability of carcinoma of the breast is statistically increased.

Fibroadenoma is a nonadherent lump, usually single, sometimes multiple, and freely movable. You can push the tumor all around with the fingers. On removal the tumor is hard and rounded. Fibroadenomas should be removed because there is a little risk that they may become sarcomatous. Most of the sarcomas of the breast come from fibroadenomas.

A typical scirrhous carcinoma of the breast is adherent. Nine out of ten carcinomas of the breast are scirrhous. They are hard tumors and near the surface cause dimpling of the skin. Dimpling is due to the formation of scar tissue. It contracts and pulls the epidermis down and sticks to it. You can make the skin dimple by moving it from one side to the other. Take out the lump and look at the surface. There is nothin else like it. It is a hard, fibrous thing that runs out in weblike lines around the edges. It usually has yellow spots. Diagnosis is pretty simple. I don't think you need to use a cautery on the breast. A knife is just as good. As to danger of spreading the tumor, there seems to be practically none at all from cutting around the lump. The usual scirrhous carcinoma has a lot of connective tissue. Epithelium is either in the form of solid cords or sometimes in gland formations.

We may classify breast cancers into three kinds: scirrhous, medullary, and gelatinous; scirrhous for the hard, medullary for the soft, and gelatinous for the slimy. In 714 cases of carcinoma, there were 645 scirrhous, 45 medullary, and 24 gelatinous. Acute carcinoma of the breast should have a separate grouping. Medullary carcinoma is usually a small, nonadherent tumor in the breast, and forms into well-formed glands that could be called adenocarcinoma. Prognosis is somewhat better than the average. The unfortunate thing is so few are like it. Gelatinous carcinoma is soft and slimy. It is mucinous. Cells secrete mucin out into the stroma and make the tumor slimy. Masses of epithelial cells are in it. This has a little better prognosis than the scirrhous.

The tumor that worries the pathologist more than anything else is a nonadherent tumor that is partly soft and partly hard, and when you squeeze it, oily material comes out which looks like a blackhead or comedo. We have learned by experience that comedo tumors are often carcinomas. Half the time, there is a real cancer in the breast. Advise the surgeon to do a simple mastectomy always. If you find nothing worse than a comedo, then you don't need to do a radical operation. Take time to search to see if there is carcinoma, because you may find it.

Paget's disease of the nipple is characterized by the clear Paget cells in the epidermis of the nipple. Make a biopsy with a sharp knife vertically through the epidermis. If it is Paget's carcinoma of the nipple, do a radical operation, because sometimes there are axillary metastases. Under the high power, Paget's carcinoma shows masses of cancer cells that arise primarily from the ducts of the nipple.

Just a few words in closing. As to the prognosis of tumors of the breast, if the tumor is a comedo tumor the chances of cure are very good providing there is no cancer in the breast. If there is a small medullary carcinoma well differentiated into glands, the prognosis is pretty good. I don't think there is any point in grading these tumors. Ninety per cent of the cancers of the breast are scirrhous. The only feature of value in the prognosis is whether or not there are metastases in the axillary nodes at the time of operation. You have to take out all the nodes and examine all of them. If there are no mestatases in any of the nodes, the chances are two out of three that the woman will be alive four or five years later. If carcinoma is found in the axillary nodes, the chances are only one to five for a five-year survival. Prognosis in carcinoma of the breast as to cure is very poor. We do not talk about cure any more. If you take a group of 1,000 women who have carcinoma of the breast, real carcinoma and not cystic disease, 35 per cent will be alive at the end of five years. At the end of ten years, about 15 or 20 per cent will be living. After ten to fifteen years, 8 per cent will be alive. Some of these women die of another disease in the meantime. We never know when cancer of the breast is cured. I don't mean that we should not operate. The women live much longer if you operate and the ulcerating lesion of the breast is avoided.

DR. E. M. JONES: I am sure we all enjoyed Dr. Bell's talk. Now are there any questions?

DR. H. O. PETERSON: If there is any cancer, does x-ray therapy, pre-operative or postoperative, do any good?

DR. BELL: I would say first that x-ray is extremely valuable in local skin recurrences of cancer of the breast. It cures them. As to whether one should give a pre-operative or postoperative irradiation to the breast, we only go by statistics, and these are not in agreement. My own opinion about it is that irradiation does not make any difference in the ultimate outcome of the case, either pre-operative or postoperative. Women will live just about as long if you do a radical operation. As soon as the diagnosis is established, give irradiation for any recurrences that may appear. Now, of course, the inoperable case is another thing, and irradiation sometimes prolongs life a long time. I know that the radiologist isn't given a chance at tumors that are operable. Tumors do respond to irradiation very well. Inoperable ones do live longer.

DR. G. D. BRAND: What about castration by x-ray?

DR. BELL: Castration with x-ray was thought to be very valuable about five years ago. A woman with carcinoma of the breast with metastases to all the

bones, had lost considerable weight. They irradiated her ovaries, and all of the symptoms disappeared. The woman came back to almost perfect health, as reported at that time. Three years later she died of recurrence. Most of the tumors develop after menopause—about half of them. I don't think that it is worth while to sterilize the cancer patient. I have seen it tried many times but usually with failure.

DR. J. S. ABBOTT: What are the criteria of inoperability?

DR. BELL: One of the most important things is supraclavicular metastases. Any metastases that you can disclose outside of the axillary nodes make it inoperable. I think supraclavicular nodes are a contraindication to operation. I think acute cancer of the breast is inoperable. Tumors that cover a large area of the breast and are adherent to the deep fascia are inoperable. They usually have entered the mediastinum, and it is impossible to remove them. Recurrences that you see many years later are usually in the bones. A woman has pain in the back, and x-ray shows metastases to the thoracic and lumbar vertebrae. These tumor cells rest for ten or twenty years. Why they stay quiescent and then flare up, no one seems to know.

DR. HERMAN WOLFF: Is there any evidence of estrogens causing carcinoma in the breast?

DR. BELL: I do not have any opinion based on my own observation. I think that the amount that most men give is not likely to produce any changes. In animals, they give enormous amounts compared to what a physician gives. If you want to give estrogens where you think they are indicated, I don't think you need be afraid of starting up carcinoma of the breast.

DR. IKEDA: One thing we might emphasize here is the observation that there are degrees in "hardness" in various types of growths in the breast, not only after they are removed and felt between your fingers as specimens, but on palpation *in situ*. There is nothing so hard as the hardness of scirrhous cancer which is woody or almost stony. There is no "give" to it. The hardness of fibroadenoma and cyst may be described as "rubbery." I consider this a valuable sign in differential diagnosis. I wish to take this opportunity to express my deep personal appreciation of this very clear presentation of the subject of breast tumors by Dr. Bell, who is appreciated by all of us pathologists as particularly outstanding in tumor diagnosis, without belittling, in any way, his great contributions to other fields of special pathology.

PARENTERAL FLUID THERAPY

RUBEN F. SCHMIDT, M.D. and ARTHUR H. WELLS, M.D.

Duluth, Minnesota

DR. A. H. WELLS: I should like to venture that physicians use more parenteral fluids and know less about their use than any other common form of medical therapy. We are about to present a case illustrating one of the more common of several serious errors which are recognized too frequently at necropsy. In addition, the resident staff has prepared a brief symposium on parenteral fluid therapy which I am sure you will find well worth your concentrated attention.

Case Report

DR. R. F. SCHMIDT: A seventeen-year-old Finnish farm girl had apparently been in excellent health until twelve hours before admission to the hospital. She was awakened during the night by a sudden onset of persistent right lower quadrant pain which kept her from sleeping. After a few hours she became nauseated and had several watery bowel movements. The steady pain became gradually more severe and the nausea was persistent so that she avoided food. Her abdomen was diffusely tender with more severe tenderness in the right lower quadrant associated with some spasticity and rigidity of the lower abdominal muscles. The right adnexa were extremely tender and rotation of the uterus caused extreme pain in the right lower quadrant of the abdomen. The white blood cell count was 12,000 with a moderate increase in the percentage of neutrophiles, and the hemoglobin was 10.25 grams. Her blood pressure was 60/40 and her pulse rate was 160 per minute and of regular rhythm. Her hands were cold and moist. She was in her mid-menstrual period. The differential diagnosis lay between acute appendicitis, ruptus corpus luteum cyst and ectopic pregnancy. An immediate exploratory laparotomy revealed a ruptured corpus luteum cyst with approximately 500 c.c. of bright red blood and clots in the peritoneal cavity. The involved ovary was resected and the bleeding controlled. After the operation there followed a rather stormy twelve hours during which time the patient received 2,000 c.c. of saline with 5 per cent glucose and one 500 c.c. transfusion of whole blood. During this period her blood pressure was very labile and on occasions was found as low as 78/50. By the following day, however, it was fairly steady at 110/56 with a pulse rate of 120 per minute. Her red blood cell count was 1,700,000, the hemoglobin 4.75 grams and a white blood cell count was 8,950. She died 62 hours postoperative. During the last 48 hours her pulse ranged from 120 to 140 and her blood pressure reading tended to fall from a height of 118/58 to 100/50. Dur-

From the St. Luke's Hospital, Department of Pathology, Arthur H. Wells, M.D., Pathologist, and Ruben F. Schmidt, M.D., Resident.

ing this period she received 3,000 c.c. of saline with 5 per cent glucose and one additional 500 c.c. blood transfusion. During the last twelve hours her breathing became labored. She developed an almost constant unproductive cough, and cyanosis of the lips. Her respirations were 36 to 38 per minute and the pulse was 140 to 160 per minute. The nurse could hear course râles. The pulse became thready and she died with Cheyne-Stokes respiration.

Autopsy

DR. A. H. WELLS: The only findings of significance in the postmortem examination were those of approximately 800 c.c. of intraperitoneal blood diluted possibly 50 per cent, a severe edema of retroperitoneal tissues, mesentery and other connective tissues supporting the various organs of both the abdomen and thorax including a grade IV pulmonary edema. Clear, watery fluid ran in large quantities from the cut surfaces of all lobes of the lungs. They were very poorly aerated.

Discussion

DR. A. H. WELLS: In my opinion this death is due to a common mistake of giving excessive salt solutions in place of adequate transfusions of whole blood or plasma. It illustrates the danger of large quantities of saline in any postoperative patient as emphasized by Coller and co-workers[10], Blalock[4], Wangensteen[35], and others. This patient only excreted 800 c.c. of urine during the sixty-two hours of life following the laparotomy. Much of the rest of the fluid given her passed out into various tissues throughout the body eventually causing death by displacing the air from the alveoli of her lungs. No doubt a loss of blood played an important role in the cause of death by accentuating the effect of the hypoxia resulting from the pulmonary edema.

We will now proceed to a brief review of the basic principles and important trends in this field of therapy.

Water

DR. F. H. WALTER: The estimated daily water maintenance requirements[5] to replace losses by way of the urine, stool and insensible perspiration of an average adult is from 1,500 to 2,100 c.c. Additional daily allowances of from 1,000 to 2,000 c.c. must be made for sweating and febrile patients.[6] Where appreciable volumes of water are being lost by prolonged gastric and duodenal aspirations, vomiting, or diarrhea, the lost fluid must be measured where possible and replaced volume for volume.

An excellent means of checking a patient's state of hydration other than that of gross inspection is furnished by measuring the total output and specific gravity of the urine. An average adult must excrete about 35 grams of waste material in the urine daily. According to Lashmet and Newburgh it requires about 500 c.c. urine with a specific gravity of 1.030 or about 1,400 c.c. with a specific gravity of 1.010 to excrete 35 grams of solids.[8] Coller and co-workers[10], Wangensteen[35], Graham[20], White, Sweet and Hurwitt[37] have recommended as satisfactory a urine output varying from 800 to 1,000 c.c. daily. Oliguria as a result of cardiac or renal decompensation, surgery or other trauma must be differentiated from inadequate water intake. Degrees of hemo-dilution or hemo-concentration have been followed by repeated determinations of hemoglobin, red blood cell count, hematocrit, or plasma proteins. The results of these tests must be interpreted in the light of all of the clinical manifestations. If there are physical evidences of dehydration, then water to the extent of at least 6 per cent of the body weight has been lost.[18]

Wangensteen[35] routinely weighs all patients following major surgical procedures. At any time in the postoperative period it is then possible to accurately determine the comparative state of hydration. Thus in a patient with postoperative oliguria with a gain of 3 or 4 per cent over the pre-operative weight, water administration is discontinued to avoid pulmonary edema.

If I can contribute but one thing to your information this evening it should be the difference between water and saline solution. The most common and serious error that I have witnessed is the use of isotonic saline to hydrate a patient disregarding its salt content. When water alone is needed, give it in the form of a glucose solution.

Salt

DR. C. R. HITCHCOCK: The optimum daily intake of sodium chloride for an adult has been estimated[5] at about 6 grams, or the amount of salt in about 700 c.c. of isotonic saline. Parenterally administered saline in excess of this amount may result in fluid retention. Such retention leads to poor healing of surgical wounds, pulmonary edema[15,18], possible edema and obstruction of intestinal anastomoses[17] and cerebral edema following craniotomy.[37] Normal persons can excrete excesses of salt up to 40 grams per day.[31] Seriously ill medical and surgical patients given much smaller amounts of salt may retain fatal quantities of the chemical. Special care must be observed when a patient is hypoproteinemic, anemic, acidotic or oliguric.

Excessive losses of sodium chlorides through vomiting, gastric or duodenal aspiration, diarrhea, intestinal or gastric fistulae, bile drainage, etc., lead to lassitude, weakness, drowsiness, anorexia, nausea, muscle cramps, dehydration and finally shock.[3,9]

An accurate clinical evaluation of the amount of chloride loss cannot be substituted for by any laboratory procedure. We must always remember that the loss of body fluids from various portions of the body give rise to entirely different chemical pictures. Thus in excessive vomiting or loss of fluids from the stomach or duodenum we see chloride deficiencies and a resultant state of alkalosis. In such cases we wish to supply the chloride ion. When losses are from the lower gastrointestinal tract, as in diarrhea, we have an acidosis resulting because excess sodium is lost. These cases require therapy with the sodium or basic ion. However, there is an automatic readjustment in the kidney functions to restore the normal

volumes of extracellular fluid by washing out the unwanted ion and retaining the desired ion.

For confirmatory evidence and evaluation of therapy quantitative plasma chloride determinations are of aid. It must be kept in mind that the plasma chloride level cannot be used as an index of excessive salt administration,[9,12] since the result of salt retention is edema and not hyperchloremia. Coller and associates[9,10] have found that plasma chloride levels under varying circumstances had to be interpreted with great care. They have depended more on clinical observations rather than laboratory procedures. The carbon dioxide combining power is another useful test. Decreased volumes below 50 volumes per cent indicate acidosis or excessive loss of sodium ion. While relatively high chloride ion loss is evidenced by readings over 75 volumes per cent. Direct pH. readings of the blood have been found useful for similar reasons.

After much critical study of the dangerous complications of excessive sodium chloride therapy, Coller and associates have retracted many of their earlier conclusions. No chloride is now given during the day of surgery or the first two postoperative days. Water is furnished either by mouth or parenterally as glucose solution. Measured losses of extracellular fluids during this period are made up by equal volumes of 5 per cent saline to which 50 grams per liter of dextrose has been added.[6] Sodium bicarbonate is used when there is a relatively severe sodium deficiency as indicated by the carbon dioxide combining power. In Coller's clinics physiologic responses to test doses of the appropriate salt solution are now depended upon rather than the several laboratory procedures mentioned. Laboratory tests are used to confirm the clinical impressions.

Glucose

DR. H. A. DASLER: The primary purpose of carbohydrate in complete parenteral substitution therapy is to cover the basic caloric requirements in order to accomplish effective sparing of the endogenous protein.[24] Adults require 25 calories per kilogram of weight under basal conditions. One gram of sugar equals 4 calories. A 60-kilogram or 132-pound person requires 400 grams of dextrose, and a 176-pound man will require 450 grams of dextrose per day. The optimum rate of administration of dextrose has been defined as approximately 0.8 grams per kilogram per hour,[26,39,7] for from six to twelve hours in the average individual. Infection, temperature, state of nutrition, available potassium, available phosphorus, cellular enzymes and trauma may be factors[13,38,19,16] affecting the not infrequent variation in degree of hyperglycemia and glycosuria resulting from this rate of glucose infusion. More rapid rates may result in hyperglycemia, glycosuria, cardiac embarrassment and pulmonary congestion. The latter two are predisposed to by infection, trauma and cardiovascular disease.[26,11,17,27,34,29]

A 132-pound adult can be given his required 400 grams of dextrose at 0.8 grams per kilogram per hour in nine hours. In selecting the strength of the dextrose solution it will be noted that this much sugar in a 5 per cent dextrose solution will require a total of 8,000 c.c. of solution, at 15 per cent strength 2,500 c.c. will be required and at 50 per cent strength 800 c.c. are necessary. The 5 per cent dextrose would have to be given at 16.5 c.c. or 297 drops per minute and the 15 per cent solution must be given at 5 c.c. or 90 drops per minute. The selection may depend on the patient's state of hydration or possible necessary limitations of water intake as in cardiac decompensation.[29] Thromboses of veins are more frequent when dextrose in higher concentrations is used. Much clinical experience has led to the average optimum concentration of 15 per cent where complete parenteral substitution therapy is enforced.[5] In my brief experience simultaneously administered insulin greatly aids in the rapid utilization of glucose in some patients.

Protein

DR. R. H. INTRESS: The causes of hypoproteinemia generally fall under one of four groups: (1) insufficient intake; (2) insufficient absorption; (3) excessive loss; and (4) faulty protein formation. Insufficient intake may be the result of dietary restrictions, anorexia and hypermetabolic states. Vomiting, diarrhea, alterations of the gastro-intestinal mucosa or enterostomies, may seriously interfere with protein absorption. Excessive losses of proteins[32,23,2] through hemorrhage, burn, proteinuria, draining sinuses and draining ascitis or pleural fluids represent the largest clinical group requiring protein therapy. Faulty protein formation has been described as being due to impaired liver function,[25,28] systemic infections and congenital defects.

The more important effects of inadequate body proteins have been described as edema, including pulmonary edema and delayed wound healing,[20,21] intestinal stasis,[22] lowered tissue resistance to infections and a predisposition to shock.

The indications[1] for intravenous alimentation of proteins depends upon both clinical observations and laboratory measurements. At least three measurements are necessary for the proper evaluation of extracellular proteins: (1) serum protein; (2) blood volume; (3) extracellular tissue proteins. The latter reservoir cannot be measured. Recent methods of determining blood volume may provide practical aid in the future. The serum protein levels are quite significant in moderate and severe protein deficiency. However, the detection of minor though apparently significant grades of protein deficiency cannot be determined by any known test in present use.

Parenteral protein therapy choice is limited to whole blood, plasma and its components and various amino acid preparations. The estimated minimum daily requirement 5 of 40 grams of protein can be supplied by approximately 1,000 c.c. of blood or 500 c.c. of plasma at an approximate cost of $60.00. "Panenamine" or "amigen" both proprietary preparations of amino acids can be supplied at $4.00 for 30 grams. The relative physiologic values of these various sourc-

es must be decided with wider usage.[33] "Panenamine" has a decided practical advantage of being usable in any saline or glucose solution which the patient may be receiving.

Summary

DR. A. H. WELLS: We have presented a young surgical patient suffering from hemorrhage who was given a fatal dose of sodium chloride and water. A very brief review of the basic principles and trends of the use of water, salt, glucose, and proteins in parenteral therapy has been covered.

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TYPE EARLY FOR Rh

Blood typing to see whether a patient has Rh negative blood, making repeated transfusions with Rh positive blood hazardous or even fatal, must be done before the first transfusions in order to give reliable results, British medical scientists warn in the *British Medical Journal* (April 28).

The tragic case of a woman who received ten transfusions, most of which were from donors with Rh positive blood, before it was discovered that she had Rh negative blood is described by Drs. R. Drummond, G. L. Taylor and J. T. Rice Edwards. In the meantime she had built up extremely potent antibodies to destroy the Rh positive blood given her.

The woman came to the doctor's attention suffering from a disease of the lymph glands which necessitated transfusions. She had no apparent ill effects from the first two transfusions. It was after the third that she had trouble and her blood was then typed for Rh. Although her blood was Rh negative, the tests at that time indicated that she was Rh positive, the deceptive results being due to the large quantity of transfused Rh positive blood.

When they later found out that the woman's blood was Rh negative, the physicians were puzzled that there were no more serious symptoms as a result of the Rh positive transfusions. Except for the difficulty with the third transfusion, the first six transfusions showed no obvious ill effects. The symptoms during the seventh were not especially severe. Nothing happened during the eighth and ninth transfusions although bad symptoms did develop later. And yet in the ninth transfusion just about a quart of red blood cells was given —donated by four Rh positive donors.

The scientists believe that the patient withstood this experience because of the fact that the blood was transfused by the slow drip method, which lessens the severity of reactions when they occur.

Fourteen more transfusions were given the patient, using blood from 27 Rh negative blood donors. Although improvement followed each transfusion and the hemoglobin was raised from 29 per cent to 70 per cent, the patient's original illness became worse and she finally died.—*Science News Letter*, June 2, 1945.

CASE REPORT

SARCOID SPLEEN

JOHN M. CULLIGAN, M.D., and WILLIAM T. SNODDY, M.D.
Saint Paul, Minnesota

A white woman, aged thirty-six, unmarried, was admitted to St. Joseph's Hospital, Saint Paul, Minnesota, March 29, 1945. Her chief complaint was persistent vomiting. She had been well until August, 1944, when she began to have dull backaches during the night and would be very tired when arising every morning. She also had a great deal of dull aching pain in both hips and upper thighs. Her temperature was 100 to 101 degrees every day. Aspirin or anacin gave some relief. In October, 1944, she had gradual onset of epigastric distress with nausea and vomiting. She was given an antacid every two hours and a glass of milk between each antacid. Under this treatment her nausea and vomiting became more severe and more frequent. On November 14, 1944, x-ray examination revealed a large normal gall bladder. On November 15, 1944, roentgenograms of stomach were negative. In December, 1944, she was given Bilron capsules one-half hour before each meal and thereafter experienced no nausea or vomiting until March 15, 1945, about two weeks before admission to the hospital. However, her lassitude, fatigue and joint pains were still present most of the time. At this time physical examination revealed a mass in the left upper abdominal quadrant and arrangements were made for admission to the hospital to determine the exact nature of this mass. She had lost thirty-three pounds during the previous year and her present weight was 109 pounds. Her appetite had been fairly good until December, 1944, but after that she had no desire for food. For constipation during the preceding ten to fifteen years she had taken laxatives such as milk of magnesia several times each week. Her stools have been of normal size, shape and color with no blood, pus or mucus.

Past History.—Patient had had measles, whooping cough, and chicken pox in childhood with no sequelae or complications. She had had a tonsilectomy in 1911, an appendectomy in 1921, a uterine suspension in 1924 for severe menstrual pain (no relief was obtained from this operation) and she had had a hemorrhoidectomy in 1926. In 1931 she developed an intolerance to fatty foods associated with flatulence and gaseous eructations but no jaundice or clay-colored stools. She was told that she had gall-bladder disease with no stones. By avoiding greasy foods these symptoms had been controlled since that time.

Physical Examination.—On March 29, 1945, when the patient was admitted to the hospital, physical examination revealed a well-developed, fairly well-nourished patient, subacutely ill. Her temperature was 99.4 F., pulse 100 and respiratory rate 24. The head, ears, eyes, nose and throat were essentially normal. The thyroid was not palpable. No lymph glands were palpable. The heart was normal in size, shape and position with no murmurs. The lungs were clear and resonant. There was a large mass in the left upper quadrant of the abdomen measuring five by ten inches. The mass was not freely moveable but did move with respiration. There was an indefinite notch on the medial side of the mass which suggested an enlarged spleen. The area over the mass was dull to percussion. There was no tenderness in the abdomen except in the right costovertebral angle. Abdominal examination was otherwise negative. The joints and extremities presented no positive physical findings and this was also true of the remaining physical examination.

Laboratory Tests.—Admission laboratory studies revealed an acid, straw-colored urine, specific gravity of 1.010, albumin a trace, 2-3 hyaline, cylindroid and finely granual casts per H.P.F., 4 to 5 red blood cells per H.P.F. and 810 white cells per H.P.F. The hemoglobin was 65 per cent. The red cell count was 3,260,000. The white cell count was 8,000. The differential count revealed 58 per cent polymorphonuclear cells, 35 lymphocytes, 3 eosinophils, 1 basophil and 3 monocytes.

It was thought the patient had an enlarged spleen causing pressure on the stomach and other abdominal organs. The etiology of the enlarged spleen could not be determined. To rule out an ectopic or enlarged left kidney an intravenous urogram was done on April 2, 1945. The conclusions from this were diminished function of both kidneys, possible renal calculus in the middle calyx of the right kidney 3 by 4 mm. in size, and a mass approximately 6 by 10 cm. in size, overlying the upper pole of the left kidney. Retrograde pyelograms April 3, 1945, revealed a right renal calculus and a left extra renal tumor. Roentgenograms of the gastro-intestinal tract with barium on March 29, 1945, and April 4, 1945, were negative except for a mass seen on the greater curvature of the stomach above the angle and extending upward to the region of the costal margin. The mass could not be fully identified but appeared most likely to be spleen.

Diagnosis.—With the above findings it appeared definite the mass was an enlarged spleen and was prob-

ably producing most of the disturbing symptoms. With this diagnosis the patient was explored April 6, 1945, and a splenectomy was done.

Operation.—"Upper left rectus incision, spleen was moderately enlarged and was coarsely granular and nodular throughout—four or five accessory spleens were also present. Spleen delivered with some difficulty—pedicle clamped—spleen removed—pedicle double ligated—accessory spleens also removed.

Negative exploration of gall bladder and stomach.

On palpation of the uterus a pedunculated fibroid was found on the dome of the uterus—this was excised. Bleeding controlled by ligatures. Wound closed with double chromic, silk worm and clips. One skin drain."

Pathological Report.—(John F. Noble)—"The spleen weighs 2.5 pounds. At the hilus there is an accessory organ about 1.5 centimeters in diameter. The spleen is firm and on section the cut surface is greyish-red in color and somewhat mottled. Small nodules are visible through the capsule although the cut surface is more homogenous in appearance. The gross picture suggests either a tumor or Hodgkin's infiltration. The tumor of the uterus is ovoid and measures 7 centimeters in length and 4.5 centimeters in diameter. It is firm and fibrous in consistency. There is no gross evidence of malignancy.

Microscopic: Sections of the spleen show it to be almost completely replaced by fairly discrete but closely packed granulomatous nodules. These are composed of epithelioid cells together with numerous giant cells resembling the Langhan's cells. The tubercle-like structures, however, show no evidence of caseation and the picture is that of a sarcoidosis. In certain regions the splenic pulp is fibrous. The entire architecture of the spleen is destroyed by the granulomatous process. Sections of the tumor of the uterus show it to be composed of interlacing bundles of smooth muscle and connective tissue.

"Diagnosis: Sarcoidosis of the spleen; splenomegaly; fibromyoma of the uterus."

For the first five or six days postoperatively the patient had some nausea and vomiting. Since then she has not vomited; is not tired when out of bed and doesn't have a backache while lying in bed.

Blood studies on April 19, 1945, revealed red blood cell count 3,620,000, hemoglobin 72 per cent and white blood cell count 7,700.

Roentgenograms on April 18, 1945, revealed no findings of sarcoid of the hands, feet or chest.

The patient was dismissed from the hospital on April 22, 1945. She was examined May 10, 1945, and was much improved and had gained weight.

VENEREAL DISEASE CASE FINDING

Recent years have witnessed remarkable advances in the treatment of venereal diseases. However, neither society nor individuals will derive appreciable benefit unless these advances in medical science can be applied to infected persons early in the course of their disease. Each year a larger number of persons are infected with syphilis but do not begin treatment until the latent or late stages, if at all. The proportion of the total cases of gonorrhea coming to treatment cannot be estimated but is probably less than that of syphilis. It is obvious, therefore, that more effort must be expended on case finding.

Education is an effective means for bringing large numbers of persons to voluntary treatment. In primary and secondary syphilis, gonorrhea and other venereal diseases, it leads all other methods of case finding. As might be expected, routine or screening tests bring in the bulk of the latent (symptomless) syphilis. However, a physical examination given in connection with the blood test can have great value as a means of finding symptomatic venereal disease, as has been demonstrated among Selective Service candidates and persons examined at the direction of courts or police. Contact investigation, the theoretically perfect method, has proved somewhat disappointing in practice, although the improvement demonstrated after conscious effort offers hope of better future performance.

It is important to note that contact investigation is the only case-finding device which, in theory, can reach all infectious cases. Education has its limitations because (a) it does not reach everyone, (b) presumably some venereal disease is symptomless in the early stages, and (c) individual persuasion is necessary to induce some persons to come for examination. Likewise, routine or mass serologic tests for screening purposes do not detect the presence of syphilis in the highly infectious seronegative primary stage nor in the stage before lesions develop, and in areas of low prevalence they are wasteful procedures. Contact investigation, therefore, remains the only universally applicable weapon which can function when all else fails and which will carry over into the era of controlled venereal disease. The disappointing result it has yielded heretofore, which is probably due to faulty techniques, must not lead to its abandonment.

The need for wider participation of the private physician in case finding is evident. He is responsible not only for the administration of therapy, but also for the bringing of new cases to treatment. He should be greatly concerned with the education of the patient regarding the nature and the possible effects of the disease. Furthermore, either he or a trained health department epidemiologist should obtain from the patient complete and accurate contact information, and the doctor's influence should be used in bringing exposed persons to examination.

All methods of case finding must be utilized to the utmost, the choice being determined by circumstances surrounding the individual situation. In addition, there must be a process of continuous improvement of old methods and development of new ones if the case-finding phase of the control program is to keep pace with the advance in therapeutic techniques.—*Venereal Disease Information,* June, 1945.

NOTES ON THE HISTORY OF MEDICINE IN HOUSTON COUNTY PRIOR TO 1900

By NORA H. GUTHREY†
Mayo Clinic
Rochester, Minnesota

"Jurisdiction over Houston County has been claimed by four nations: Spain, France, England and the United States; by the French and English Colonial authorities; by Louisiana District; by the executive power of the territory of Indiana; by the territories of Louisiana, Missouri, Michigan, Wisconsin, Iowa and Minnesota, and by the State of Minnesota. As a part of Minnesota Territory it was included in Wabasha and Fillmore Counties before attaining county privileges itself."

History of Houston County, 1919, page 58.

The stories of the pioneer physician, of the development of medicine, and of civilization are closely interwoven. One who would know the lives of the early physicians must consider the various influences that determined the growth of the communities in which they lived.

The State of Minnesota, admitted to the Union on May 11, 1858, occupies the approximate center of North America, and of this state Houston County is situated at the southeastern corner, one of the most beautiful portions of a beautiful land. The part of the region that borders on the Mississippi River is rugged and picturesque; from the Mississippi, hills and valleys extend westward to the rolling prairies of the central and western portions of the county. The greater part of the county is well watered by many rivers and creeks, a large proportion of which are springfed. Named for General Sam Houston, Houston County is bordered by Winona County on the north, the Mississippi River on the east, Alamakee and Winnesheik Counties of Iowa on the South, and Fillmore County on the west.

The part that the Mississippi River has played in the development of the communities along its banks, as of the states that lie in its valley, has been treated in appreciative detail in many histories. Nor does the story of Minnesota, through the period of exploration, which began in 1680 and ended in 1835, require more than mention here. Father Louis Hennepin and his two companions, in 1680, were probably the first civilized men to see the bluffs of Houston County. Others, explorers, fur traders and lumbermen, came in the succeeding century and a half, but it was not until nearly a decade after the advent of soldiers at Fort Snelling, in 1819, that settlers began to arrive in southern Minnesota in any appreciable number. The military expedition under Lieutenant Colonel Stephen W. Kearney which in 1835 traveled overland to Winona from Iowa, from the southwest, crossed a corner of the future Houston County.

In these notes there is included much material relating to general history and the conditions of pioneer life and to medical history and the early conditions of practice that applies not to Houston County alone but to all the counties of southeastern Minnesota. The experiences of the settlers of the region, including physicians, in establishing homes and livelihoods, towns, schools and churches were essentially the same. Therefore, in the sketches of medical history in Fillmore County and in Olmsted County that are to follow in due time, the common background given here will not be repeated in detail.

†Member of the Editorial Department, 1916-1919; 1919-1939, personal secretary and assistant to the late Dr. William James Mayo.

By 1835 opportunity awaited in southeastern Minnesota for all who would serve the new land. In the early decades of the nineteenth century the Root River Valley and the adjacent territory were ranged by a band of Dakota Indians, who were a division of the Sioux. As the result of a series of treaties, lands in southern Minnesota, including those which comprise Houston County, passed from the Indians to the whites and, finally, with the signing of the Treaty of Traverse des Sioux on July 23, 1851, and of the Treaty of Mendota on August 5, 1851, the last of Indian sovereignty was removed from this locality.

Long before the public domain in the Upper Mississippi country became subject to pre-emption, in 1841, the region of Houston County, because of its location and its rich basic resources, water, soil, stone and wood, had begun to attract settlers. The lumbermen were the first permanent pioneers in Minnesota, as in Iowa and Wisconsin, coming in great numbers to establish a new frontier and to lay the foundations of the first large private fortunes in the Northwest. It was not until 1850 that the true value of southeastern Minnesota for agriculture began to be appreciated and the rich, warm, sandy loam utilized. In the meantime there had been coming, and there continued to come, in rapidly increasing numbers, farmers, carpenters and artificers; lawyers, politicians and statesmen; and practitioners of medicine, from quacks, cultists, bone-setters, herb doctors and other itinerant members of the guild, to the men of the established school of regular medicine who sought permanent homes.

The pioneers came by three principal routes. Many embarked on the Mississippi River at points in Illinois which had been reached overland and traveled directly to this county; others boarded Mississippi River boats at Illinois points, disembarked in Iowa and traveled by land into Houston County; others came to La Crosse overland, in the earlier years with oxen or horses, after 1858 by rail, and crossed the Mississippi River on ferries to Houston County. Brownsville, founded in 1848, was a favorable landing spot and became a chief port of entrance for settlers who came from La Crosse or by boat from the south or from the north, for many pioneers came down the Mississippi, having penetrated from the east to St. Anthony, St. Paul and other settlements farther north. From 1851 on, a continual stream of settlers poured into the region, not only prospective Minnesotans, pioneer citizens for Houston County and other southern counties, those lying to the north and farther west, but many bound for lands beyond Minnesota's frontier.

Governor Alexander Ramsey, the first territorial governor, arrived in St. Paul on May 27, 1849. On October 27, 1849, Wabasha County was established, composed of practically all of the southern part of the present state of Minnesota, and of this huge county the territory which now is Houston County was a part. Fillmore County was created by an act of the Legislature on March 5, 1853, an act by which other counties throughout the state were created or had their boundaries altered. The lines were not definite, but the young Fillmore County comprised all of the present Houston County, nearly all of Winona County, parts of Olmsted and the present Fillmore County and a small part of the present Wabasha County. By a bill approved on February 23, 1854, the counties of Houston and Winona were created as they now exist, and new boundaries were defined for Fillmore, Wabasha and Goodhue Counties. The county seat of Houston County was first at Brownsville but on April 26, 1855, it was placed at Caledonia. The county is about twenty-four miles square and contains 334,112 acres of land.

Immigration increased, doubling and redoubling, and sites for towns and farms extended far westward. Sales of land at Brownsville-Chatfield land offices were

heavy; in 1856 the land office was transferred entirely to Chatfield, in Fillmore County, as the tide of landseekers moved west to available territory. In this year Houston County had the following post offices: Brownsville, Caledonia, Hamilton, Hackett's Grove, Hokah, Houston, Loretta, Looneyville, La Crescent, Portland Prairie, Sheldon, Spring Grove, San Jacinto, Wiscoy and Yucatan.

The native counties of the early settlers in Houston County can be known by the names of some of the townships and settlements. Other localities were named in memory of loved towns and regions elsewhere; others for incidents, persons and topographical features; still others received or retained Indian names, and certain hills and streams bear the names of wild animals that were common in the county in its early years.

The history of Houston County is rich in stories and anecdotes of the trials and triumphs of the early settlers, and of such stories none are more interesting and moving than those which concern the experiences of the courageous pioneer physicians. Although on casual thought these pioneers appear to have lived in a romantic setting, with every opportunity for obtaining valuable lands cheap or free, and for unlimited hunting and fishing, their lives were filled with responsibility, hardship and peril. Winters were inclement. Most of the people were poor, some of them desperately so. That poverty was ever present was evidenced by the fact that throughout the county overseers of the poor were among the first officers appointed. There was little money available, commodities were few and even the most ordinary comforts were luxuries. Delinquent tax lists became long. Land, although rich, was productive only in response to intensely hard work, and when grain had been grown, mills for grinding were poor and distant and transportation difficult and slow.

The story of transportation in the county is a fascinating one. Traffic on the Mississippi River was heavy. Entrance from the east across the Mississippi was affected by ferry; the growth and decline of the ferry business in itself deserves telling. Traffic on the tributary Root River within Houston County never was great and soon was discontinued, although in the early years there was a ship-building yard at the village of Houston and for many years, beginning in 1858, a ferry was operated across the river at that point on which the rates of toll were as follows: two horses and a wagon, 25 cents; single horse or ox, 10 cents; cattle and foot passengers, 5 cents each; sheep or swine, 3 cents each.

The settlers, English, many from New England, Scotch, Irish, German, Dutch, Swedish and Norwegian, found their way into the interior from Brownsville, La Crescent and other ports of entry as best they could, hewing roadways, following Indian trails. Most of the settlers who came in the middle fifties by land brought oxen; a few had horses. As late as 1860 there were in the county 1,118 oxen and only 563 horses. Gradually came extending routes of ox carts and stage coaches, stage highways and, ultimately, railroads. The first official action toward good roads in the county was taken at the first meeting of the county board of commissioners, at Brownsville, on May 26, 1854. Various roads were projected and the viewing of others was ordered, and when roads could not be assured, cartways or unimproved trails leading from the main roads to the homes of settlers were specified. The time came that some of the settlers obstructed roads by fencing those which crossed their lands or infringed on them, so that the government was forced to order all obstructions removed and to provide for the restoration of obliterated tracks. The old territorial road from La Crosse to St. Paul crossed Houston County, through Mound Prairie. At one time three lines of stage coaches were operated over this route, and the old Lorette Hotel,

at Mound Prairie, still famous in county annals, was an important stopping place. In the heyday of stage-coach travel, in 1876, the county had daily, weekly and bi-weekly coaches departing from Brownsville and Caledonia.

The need for railroads in Houston County was apparent by 1853 and from that time constructive and increasingly successful effort was made, through the legislature and by the communities immediately concerned, to secure rail facilities for passengers and freight, and it is noteworthy that physicians were active in this effort. Although as early as 1855 the Territorial Legislature took action to establish a railroad through Houston, it was not until 1864 and 1865, after sundry reverses, that work began in earnest. Thereafter, transportation by rail progressed decade by decade until all parts of the county were reached.

With permanent white settlers came the school house, for the pioneers did not wait for governmental aid, but immediately undertook the establishment of schools, and in this undertaking, perhaps especially, were the pioneer physicians helpful. Sometimes, at first, classes were conducted in open sheds, sometimes in cabins, sometimes in a family's one room, in which case the two groups, the family in one, the pupils and the teacher in the other, were separated by an imaginary line, conceded by courtesy and established by concentration. Houston County District No. 1 was created on June 8, 1854, at the second meeting of the county supervisors. The first schoolhouse was built that year, near Caledonia, by subscription. Other districts and buildings soon followed, although because of the conditions of pioneer life, progress was slow. By 1882 definite advance was apparent. There were substantial school houses, some of them with two rooms, with relatively fine equipment: books, maps, globes and blackboards. In succeeding decades development was steady and sound. The history of expansion in all the school districts of the county and, indeed, in the districts of neighboring counties, was much the same.

Churches from the first were well represented in the county and had steady growth and influence. The Methodist Church was organized in Hokah in 1853, in Caledonia in 1854. The Swedish Baptists established a church in Houston in 1853, the first in America. The first Catholic services were held in 1855; the first Catholic Church was built in Brownsville in 1859. The Norwegian Lutheran Church of Spring Grove was organized in 1855. Presbyterian services were held in La Crescent in 1857, and the first church of this denomination was organized there in 1859. It is interesting that in accounts that have been gathered concerning the early physicians in the settlements of the county, there recurs the statement that the given physician was a member and supporter of a church, sometimes of more than one, of specified denomination.

Newspapers were sponsored early, the first of which was the *Southern Minnesota Record*, in 1855, at Brownsville. In 1859 this paper was absorbed by the *Hokah Chief (Minnesota Pioneer)* which was begun in 1856. The *Houston County Journal*, now the *Caledonia Journal*, was founded in 1865; the *Caledonia Courier* was started in 1877 and continued two years. The *Houston County Argus*, now the *Caledonia Argus*, first appeared in 1879. The *Houston Signal* was begun in 1882 as the *Houston Valley Signal*. And in 1882 also the *Spring Grove Posten* was published. Later its subscription list was assumed by the *Decorah Posten*. The *Spring Grove Weekly* followed the *Spring Grove Posten* and subsequently was taken over by the *Spring Grove Herald*. Physicians apparently were not drawn commonly into the newspaper business, for in the accounts of the early days when multiple activities on the part of the physicians were the rule, the mention of a physician-publisher of a newspaper is rare.

At the risk of including too much material of general rather than of obviously medical interest, it may be recalled here that the panic of 1857 cast a gloom over Houston County, as over all other portions of the state. Then came the Civil War, disrupting communities and interrupting careers, but soldiers, including farmers, laborers, physicians and others returned and resumed their occupations and professions. The census of 1860, the first after the organization of the county, had given the population as 6,545; that of 1865 gave 9,792 (number of families, 1,755). The population in 1875 was 16,645. In this year there were in the county fifty-eight manufacturing establishments: shingle factories, carpenter shops, cooper shops, sawmills, corn mills, flour mills, grist mills, turning lathes, foundries and a woolen mill. There was one steam engine of five horsepower, and there were eighteen water wheels. There were soon to be in the county four large flour mills and, as evidenced by the number of water wheels, there already were grist mills, at least on the Root River and on every usable tributary creek. Coopers were in demand. The railroad shops in Hokah began operations in 1866, only to be reduced to the status of repair shops in 1872 and removed in 1880, ending the town's greatest prosperity. A census of 1879-1880 showed a decrease in population in the county to 16,339, owing chiefly to the change in local activity of the railroad.

In 1868 the Grange, known officially as the Patrons of Husbandry, was established in the state and E. McIntyre, of Houston, was the deputy appointed to organize a branch in Houston County. In the main, this rich and favored agricultural region, from boundary to boundary, offered permanent and profitable homes to the eager settlers and proved worthy of their trust and labor. Although the usual hazards of farming existed, although the grasshoppers came in 1879 and they and chinch bugs were a problem in the next few years, although there were occasional severe storms, the county was always relatively free from blights, pests and disasters, and a total crop failure was never known.

In the beginnings and growth of Houston County pioneer physicians played their part, many of them evidencing practical interest in farming, all of them furthering civic and educational betterment and applying their knowledge of healing.

Beginning of Medical Practice

Unfortunately, there are available only sparse written accounts of the practitioners of medicine who came into Minnesota in the first half of the nineteenth century. It appears that many of the clerks of the early fur companies and lumber companies possessed some medical knowledge, as did the missionaries, who realized the value of ability to heal in gaining recruits to the Church. That members of the regular medical profession came into northern Minnesota in the next few decades is known, but of most of them there is a scant trace and of their professional activities little or nothing can be established; in the southern part of the state the record perhaps is a little plainer.

The announcement cards of physicians who were entering new communities in those early decades are interesting; many of them have been quoted by different writers in various articles pertaining to the history of medicine. The information set forth ranged from a simple statement of establishment of office and willingness to serve, to declarations of startling frankness as to professional attainments and to descriptions and promises couched in such flowery language as to require clarifying in the mind of the reader. By the early eighties a decline in the use of advertising by physicians had set in; even earlier, the custom of publishing business cards in newspapers had fallen into disuse, to the disappoint-

ment of an occasional publishing editor who needed the paying business and who declared that unless the people knew about doctors, the doctors could not fulfill their mission of healing.

Most of the early physicians, or practitioners of medicine, were not possessors of libraries. As one pioneer settler in Houston County has recalled, "Most of them had two or three medical books, maybe only one volume, usually Gunn's Medical Book." The man who brought with him into the new country or who thereafter assembled a library, medical or general, was an exception, and among the exceptions Dr. Giles James Sheldon, of Mound Prairie, was outstanding.

In Houston County the history of regular medicine dates from June 27, 1853, it is believed, with the coming of Dr. Giles J. Sheldon, a native of New York, to the vicinity of Wild Cat Bluff, at Brownsville, in Brownsville Township, although since at that time there were only four families in residence his practice was not immediately heavy. A man of remarkable personality, sterling character and professional skill and versatility, he entered actively into the life of the community. On May 9, 1854, as Judge Sheldon, he presided at the first court held in Brownsville. In 1856, Dr. Sheldon moved with his family to Mound Prairie Township, where he lived out his life.

For a decade and more after 1853, well-qualified physicians were scarce on the western side of the Mississippi River in Houston County. For medical services the people here as in other parts of the new territory were dependent on quacks, itinerant practitioners, bone-setters, herb doctors and the like. The standards of practice among such gentry were not high. Any one, regardless of his professional attainments, might hang out his shingle as a "doctor"; often the title was given to such a one by those whom he treated. Among practitioners of this type there undoubtedly were some who possessed human sympathy, a sincere wish to serve the sick and a natural facility in making them comfortable. Such superior members of the group used common sense in the presence of illness, could take pulse and temperature and could dress wounds. Some of them, perhaps from observing trained physicians at work, had gained a little practical knowledge of drugs and their effects. The patients who received aid from persons of this type were fortunate; those who were attended by itinerant quacks and "medicine men" were likely to fare badly.

Midwives, handling as they did in those early years the major portion of obstetrical cases, were important. From the standpoint of expense alone, they were a boon to the citizens, because although physicians' fees were low, midwives' charges were much less and midwives' services were more comprehensive. For a small amount a midwife would attend the birth, take care of the mother and the baby for a week and help with the housework. For reasons other than that of expense and, of course, of scarcity of physicians, midwives superseded medical practitioners in rural communities, at least. Owing to a mistaken Spartan belief on the part of the laity, the woman who in normal childbirth was attended by a physician was looked down upon by her neighbors as an extravagant weakling. A physician was called, therefore, only if there were serious complications at delivery beyond the confidence or power of the midwife to handle; unfortunately there were many instances in which, for lack of medical care, lives of mothers and children were lost. It is pertinent that although physicians of that time had little knowledge of antisepsis and asepsis, most midwives had less.

On the average the settlers were sturdy and except for accidents and emergencies they got along well in time of illness with the aid of friends and neighbors and such practitioners as have been mentioned. Disease took its greatest toll

among little children, who could not be inured to the severe conditions of pioneer life.

In historical accounts of localities it is interesting that when physicians have been mentioned, it has been, as a rule, their part in the community political, agricultural, civic and educational activities that has been stressed, rather than their ability as healers or the extent and scope of their medical practice.

Background for Medicine in the Townships of Houston County Prior to 1900

Among the counties of Minnesota none afforded in the middle decades of the nineteenth century a more interesting and varied region for settlement or a higher challenge to valor and effort than did Houston County, and the earliest pioneer physicians who came into the county, of many different nationalities and of as many types and degrees of professional training as of types and degrees of personal excellence, were indubitably men of courage and energy. Some, of roving spirit, came in search of new scenes; these after a time moved on, leaving slight impress. Others, of steadfast purpose, remained to help build the stable structure of organized community life and to serve the people professionally; these men found endless hard work in traveling over the countryside on foot, on horseback, in buckboard or sulky, mending the victims of the countless accidents of milling, lumbering, farming and hunting in the new communities, meeting the needs of the ill and combating as best they knew outbreaks of diphtheria, smallpox, typhoid fever and other diseases. Some had come for personal reason of frail health, in the hope of benefiting from Minnesota's salubrious climate, even then widely proclaimed, and none were more diligent and faithful than these. All found testing in the ever-present discomforts of pioneer life and adventure in its actual dangers. They have left a picture of achievement drawn on a background of townships.

In these townships the physicians had relatively wide and overlapping practices; some of them had intercounty work and even interstate calls (into neighboring Iowa). Many of them changed residence from one village to another and from one township to another as opportunity failed or offered; it should be said that some of them who followed their profession in the county prior to 1900 are living and practicing medicine, there or elsewhere, well into the twentieth century.

Although conditions of life and of medical practice throughout the county were basically the same, the townships bordering on the Mississippi River knew greater immediate fear of communicable diseases, especially the deadly Asiatic cholera, likely to be transmitted by travelers coming in on river boats, whereas the inland communities experienced special difficulties of alarms and excursions over reports that hostile Indians were coming, of attacks by wolves against livestock and even against pedestrians, of isolation, and of slow and laborious transportation of passengers and supplies over poor or nonexistent roads. As for the townships themselves, in natural features, they were then, as they are now, of rarest scenic beauty, of hill and valley, bluff and gorge, mound and cave, marsh, brook and river, sheltered field and rolling upland prairie, rich timber and luxuriant lower growth. Each township was a world in itself, worthy of chronicle for its local color, human interest and historic evènts, which can be only suggested here.

Because of the difficulty of presenting an acceptable narrative that would include adequate stories of all of the physicians known to have practiced medicine in Houston County from the middle decades of the nineteenth century to the turn of the twentieth century, biographical detail, whenever it is known, is reserved for the series of sketches that in alphabetical order will follow the narrative.

In the next few pages, to serve as a roster and to identify men with their localities, the early physicians are named chronologically in the order of their appearance in townships, and the townships, except those that border on the Mississippi River, which are discussed in irregular order, are given in approximately geographical sequence from north to south in four series or rows from east to west.

Jefferson Township was the site of the first settlement in Houston County. The little hamlet long known as Ross's Landing, on the Mississippi, in the sloughy southeastern corner of the township, was founded in 1847 by John and Samuel Ross, who were the vanguard of pioneers soon to come. When Jefferson Township was organized, in 1858, the settlement became Jefferson Village. For many years John Ross was the only continuous resident of the village. After 1868 began a brief period of prosperity of the settlement, which then had high hope of becoming a point on the river route of the Clinton, Dubuque and Minnesota Railroad. Unfortunately, after construction of the line had been started near Jefferson, some of the local citizens demanded exorbitant sums from the company for alleged damages to property. There resulted a lawsuit which went to the supreme court, and when in 1873 the road was built, the track was laid by the river's edge, Jefferson was ignored, and New Albin, Iowa, became the local station. Jefferson's chief resource and hold on fame was its fishing industry, which in some seasons netted in single hauls from 50,000 to 100,000 pounds of marketable fish of many varieties, among them enormous catfish.

There is record of illness, of birth, of accidents and of tragic death among the early families of the little community, but not of the presence of a resident physician, regular or irregular.

Brownsville Township, central of the five townships of Houston County which border on the Mississippi River, was the logical approach from the east into the immediate region, as into the whole southern part of the state, and its village of Brownsville, county seat, first federal land office, and port of debarkation for immigrants and their possessions, was the gateway.

Brownsville, founded in 1848 by Job Brown, typical frontiersman of the period, was confirmed as a townsite at the last meeting of the first county board of commissioners of Houston County on October 28, 1854, at the request of Job Brown and his brother Charles, who had joined him several years earlier, although not until 1858 was the village organized officially. Job Brown probably was influenced by two facts in choosing the site: first, that it was a good natural landing and, second, that it was in the Neutral Strip, so that he would not have to pay tribute to the Indians and presumably would not be molested by the fur companies.

Wild Cat Bluff, towering 500 feet above the village of Brownsville at its foot, is the highest point on the river for many miles and it was, and is, a landmark for pilots and river boats. Issuing from its base, numerous springs, in the early years, gave ample water supply of pure water for the settlers and the debarking travelers. Brownsville, fronting the river from a narrow shelf of land twenty-five feet above the water, curves around the foot of Wild Cat Bluff, turning then slightly away from the river and upward into a ravine; to the north and south of the settlement large, low-lying tracts of land, which in floodtime in the early period were often under water, serve to emphasize the advantageous situation of the village. As to the origin of the name Wild Cat, legend has it that Job Brown (sometimes called Wild Cat Brown) having shot a wild cat and placed

the stuffed skin in a tree near his wharf, the landing thereafter duly was known as Wild Cat Landing, and that the bluff and Wild Cat Creek, which joins the Mississippi near by, received the name at the same time.

To this picturesque spot and thronging settlement, which for years was the busiest port of entry into southern Minnesota, came traders, adventurers and solid pioneer citizens; and in the last-named group were representatives of the learned professions as well as of the crafts and of farming and business. One citizen whose name is included here from fancy rather than reason was Edward Bogan, who came from Donegal, Ireland, in the early fifties. In subscribing to an illustrated historical atlas of Minnesota, in 1874, he listed himself as "gentleman" among sundry farmers, druggists, physicians and others. Whatever his right or claim to the title, he apparently was a useful citizen, who served as judge of probate in 1858 and again in 1862.

That there were physicians among the incoming settlers is known; it is only strange that the names of so few practitioners of medicine should have appeared in the annals as permanent residents of Brownsville. As was mentioned earlier, there came in 1853, probably the first physician to settle in the county, Dr. Giles J. Sheldon, a conservative, well-educated practitioner who was lawyer, civil engineer and farmer as well, and who presently moved inland to the space and relative peace of Mound Prairie Township. Perhaps the tempo of life in the river town was more in keeping with the spirit of Dr. John B. Le Blond, a colorful and progressive figure, who arrived around 1856, when the village was not far from the height of its prosperity. Brownsville at that period had 228 inhabitants, more than twenty stores and offices, a newspaper, a theater and a bank; river traffic was heavy, the levee was crowded with goods and incoming travelers and several stage lines were operating out of the town. In 1860, appearing as an independent exponent of utilization of the great river, came young Dr. J. M. Riley, who is seen rowing a skiff down from La Crosse, cutting the strong current to beach permanently at Wild Cat Landing.

During the confused period of the Civil War, it has been said, Captain See, supposedly the possessor of medical knowledge, was in Brownsville, but only casual mention of his name could be found until, when he had been given up by the writer as almost mythical, a fortunate reference to old newspapers of Rochester, Olmsted County, of the period between 1863 and 1865, inclusive, brought evidence that established Captain See, not as a physician of Brownsville, but undoubtedly as Charles H. See, of Caledonia, Houston County, Captain and Provost Marshal of the First Congressional District and President of the Enrollment Board. Because the services of this board were important to the physicians and the laity of Houston County and of neighboring counties as well, additional comment follows.

On March 13, 1863, newspapers carried long articles giving the text of the national Conscription Act, in Section V of which it was specified that a provost marshal, with the rank, pay and emoluments of a captain of cavalry should be in each congressional district, subject to the order of a provost marshal general at Washington, D. C. In the *Rochester City Post* for May 16, 1863, there appeared the following notice:

> Hon. Charles H. See, whose appointment as Provost Marshal for the 1st Congressional District of this state has established his headquarters in this city and will keep his office for the present, we learn, with J. V. Daniels on Broadway.
>
> The several duties of a Provost Marshal, as we gather from the Conscription Act itself, are to arrest all deserters from the army wherever they may be found, and send them to the nearest military commander or post; to detect, seize and confine spies of the enemy, and

deliver them immediately for trial to the general commanding, and to carry into effect the orders and regulations of the Provost General concerning the enrolling and calling into the service the national forces.

He is also to be the president of the Board of Enrollment and is to divide the District into suitable subdistricts and appoint enrolling officers therefor and have the general supervision of the carrying into effect of the Conscription Act. Captain See is a man of much ability and the Government has made a judicious appointment of a superintendent of the draft in this Congressional District.

From time to time in succeeding issues there were notices relating to the draft in the district and to the membership of the enrollment board, which was composed of the provost marshal and two physicians. Because of recurring charges of fraud, the medical personnel was changed at different times and Captain See himself once came temporarily under suspicion. "The confusion unavoidably consequent upon an entire change of the Board has given rise to some choice specimens of talk and speculative gossip." But all that is another story.

While the subject of the enrollment board is uppermost, however, it is worth while to note that the grounds upon which applications for exemption were made were (1) alienage, (2) nonresidence, (3) unsuitableness of age and (4) manifest physical disability. To these there was added later, as announced in a notice of extension of hearings to January 4, 1864, "the election of persons where two or more members of the same family are subject to draft." The newspaper item which carried this information to the public ended cheerfully, "Come ye cripples, poor and needy—Sick and seedy, lame and sore." Editorial writers in that day were lively exponents of free speech and the freedom of the press, and a scathing paragraph was devoted to the "cripples" who presently thronged Rochester from all counties of the district, Houston and Fillmore among them, seeking exemption on the ground of physical disability, many of them having "traveled fifty miles on foot to do so." It was announced with satisfaction that only one-third or less were exempted, the applicants not receiving much favor "on the scrutinizing examination of Surgeon Mayo nor on the searing cross-examination of Captain See." But with greater feeling it was written elsewhere, "the numbers of 'manifest' cases, however, are large; and one experiences a sickening sensation after a few moments' tarry at the hospital rooms at the Provost Marshal's office."

Houston County, of course, was in the picture from the first to the last. In a little notice entitled "Draft," in the *Rochester City Post* for March 11, 1865, it was stated that "drafting took place in some towns in Houston County on Wednesday, in which seventy-eight men drew prizes with invitations to report to Captain See in this city." Captain See no doubt appeared personally in Houston County from time to time and since his immediate co-workers were physicians and since much of the work of the enrollment board had to do with consideration of applications for exemption on the basis of physical disability, it is not difficult to understand why his name should have been associated with medical practice, in Brownsville as elsewhere.

(To be continued in August issue)

President's Letter

It has just been announced that the Minnesota State Fair Association has cancelled for this year the usual meeting and display at Saint Paul. This decision was certainly not made without deep regret by the management; and should this devisement, for the purpose of travel conservation, be long needed it would mark another disastrous byproduct of wholesale war. For we are a great agricultural state; and those raising foodstuffs like to show them to those who consume the surpluses. This year there would be little need for racing events or pyrotechnical displays to liven up jaded spirits. Just show the crowds a cavalcade of well-fed livestock. Lead them around to sniff the aroma of some choice firkins of butter or sides of bacon—yes, some roasting hams. The nostalgia clogs my pen and the paper blurs! And we are in a far better state as to food supplies than most of the rest of the world. It is a crime to interpose any lag in the effort to produce more and better food.

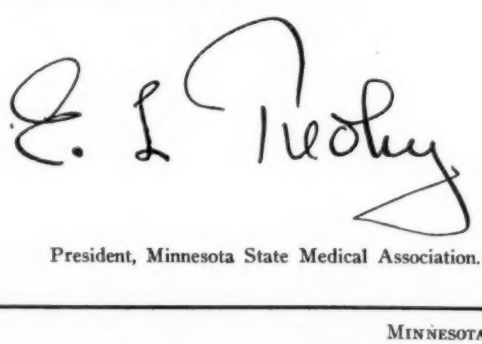
We have had to abandon our regular scientific session of the year for the same disastrous reason that the war needs come first. It is to be hoped that our various county and district societies will make unusual efforts not only to equal their usual scientific meetings but to expand them. Mr. Rosell, our efficient executive secretary, has promised to act as a clearing house for those secretaries desirous of getting outside speakers or teams to provide clinical programs of especial interest and purpose.

It is suggested that you send your requests and suggestions to our state office. By grouping your requests, itineraries may be mapped so that good programs may be brought in sequence to various centers in the state. It is planned (at this writing) to hold one meeting in Fergus Falls in late August or early September. The western and southwestern sections of the state are urged especially to consider this project as a possible war alternative in view of the many obvious inducements to limit or abandon all medical meetings. Few need be reminded that there never was a period when doctors were more in need of opportunities for a digestion of current medical, ideological and administrative problems. Many of our scientific journals are waxing as thin as the sides of beef in the butchers' coolers. There is the greatest need of word of mouth reporting.

From the Council of Medical Service and Public Relations of the AMA comes, via Joe Lawrence in Washington, an item that gives tired doctors just a little encouragement. Here it is: Senator Downey of California has introduced Senate Resolution 134. Three purposes are mentioned. First, to find out whether it is possible soon to release from the armed forces for obvious civilian needs, some medical personnel "without impairment of the war effort;" second, to speed the demobilization of medical personnel as the needs of the armed forces diminish; and third, to restudy the question of securing an adequate supply of trained medical personnel for the future.

These suggestions are made to the "Committee on Military Affairs, or any duly authorized subcommittee thereof." Let us hope that this resolution is expedited and action loudly requested. Medical men in service devoutly hope than when V-J day does come, interminable delay in separation from the service will not devolve solely upon whether total peace is devised at San Francisco, Berlin, Tokyo or anywhere else. Those who heard Stephen Baxter give his report on age levels of physicians in Minnesota before the Council and House of Delegates this year should see clearly what is happening. The cream of our members (in the middle age group) is mostly in service; the geriatric group—the virile crew that refuses to retire—is facing the same hazards and the same sort of exist as our grossly abused cars; the recruiting is too limited and militarily overweighted. Women, 4-F's, and those trained expressly for the Army or Navy cannot suffice to teach the oncoming generations of doctors or replace those in civil life adequately endowed for its needs and services.

To Wadena County chairman, Dr. John S. Grogan, go congratulations for the first county to report meeting its full quota for the Mayo memorial drive. The last half of every collection campaign is always the most difficult. Byron Shimp reports that we are well entered into the last half. Let us all push this magnificent effort to final victory.



President, Minnesota State Medical Association.

Editorial

CARL B. DRAKE, M.D., *Editor;* GEORGE EARL, M.D., HENRY L. ULRICH, M.D., *Associate Editors*

THE MAYO MEMORIAL CAMPAIGN

AS announced at the Mayo Memorial dinner given at the Coffman Memorial building at the University, June 5, the total funds pledged so far toward the erection of the Mayo Memorial building at the University Medical School in Minneapolis exceed a million and a quarter dollars. The Legislature appropriated $750,000 and over $500,000 has been pledged by private contributions. Although the campaign was to have come to an end July 1, the soliciting of funds will continue until the full two-million-dollar goal is reached.

It takes men with large vision to attempt large undertakings such as the proposed Mayo Memorial building. The idea was conceived by former Governor Stassen when he appointed a committee of legislators to consider ways and means to build a suitable memorial to two outstanding Minnesota citizens—the Mayo brothers. The decision to memorialize the two brothers by the construction of an additional medical building on the University campus was a happy one. We have a fine medical school, but if it is to continue to hold its place in the vanguard of medical education and to contribute to medical research, it must have expanded facilities. If our medical school is to attract the best in medical research and education and hold the outstanding men we already have, it must provide proper equipment. And as Dr. Donald J. Cowling said at the Memorial dinner, we must aim beyond the present bare necessities.

Admiral Ross T. McIntire, Surgeon General of the Navy, brought out at the Memorial dinner that medical research has come of age during the war because of necessity. Measures for preventing diseases which would otherwise have defeated our troops in various war areas have been developed. Methods have been adopted which have resulted in saving thousands of the sick and wounded. Research has made great strides in keeping fighting men fit by providing proper ventilation in the tropics, in submarines, and the holds of battleships, in determining men with good night vision, in providing a compact apparatus for providing fresh water from sea water, and lately, in providing armour jackets as protection against fragments of shrapnel, and even low velocity bullets. He paid tribute to the valuable research conducted at the Mayo Foundation on the effects of high altitude flying and dive bombing on the human organism.

Research stimulated by the war will prove of value in the future. There is a general feeling, however, that prewar research, not only in medicine but in other scientific lines, has been backward. The proposed Mayo Memorial will provide the space and equipment for an expansion of medical research at the medical school.

Contributions are tax-exempt and should be made payable to the Mayo Memorial Fund and sent to 1126 Northwestern Bank Building, Minneapolis 2. Pledges may be made payable any time before December 31, 1946.

A MORE FARSIGHTED POLICY FOR MEDICINE AND OTHER SCIENCES

THE mobilization of the manpower of the country has been a stupendous task. The results of the all-out war effort have so far been cause for some satisfaction and self-congratulation. There has been some criticism, however, that some of the legal limitations of the Manpower Commission have been shortsighted. It is stated that England succeeded in minimizing interruption in the training of the young men who will be her scientific teachers and leaders in the next generation. In Russia, students of ability in science were not put in the armed forces. In our country there has been an all-out policy counting on a short war, and while thousands of young scientists have been delegated to war work, no provision has been made for the continuation of peacetime scientific research. The scientific schools have been largely stripped of their professors and students. A recent editorial in the *Saturday Evening Post* contends that more than

15,000 chemists and chemical engineers are now in the armed services doing work having no relation to their abilities. Similar criticisms have been made that too many farms have been deprived of young men who would have been of more service on the farms. It must be admitted that it is easy to criticize. War is an extravagant waste, and the greatest tragedy of war is the sacrifice of young men of outstanding ability.

In the medical field, we have remonstrated against the failure to exempt from military service the few thousand young men who were contemplating studying medicine and who would be needed to keep the medical schools filled. Since July 1, 1944 only young women and draftees classified as 4F have been allowed to take up premedical studies. The medical schools, as a result, will suffer from a lack of students, and in a few years the hospitals will lack sufficient interns so essential to hospital care. There is good reason to believe that there will also be a dearth of physicians to meet postwar needs. Similarly, the scientific schools are suffering from reduced classes, and science will suffer from the termination of postgraduate scientific study. After the war and after these young scientists return from war work or service, there is danger that new family responsibilities and lack of funds may prevent them from resuming their studies for doctorate degrees. Their efforts in war work, as a rule, will be of little value in the peace economy.

Anticipating this undesirable situation, efforts are being made to encourage young doctors and former young students of the natural and social sciences to resume their former studies so as to assure a sufficient supply of material for teaching positions and research work. The Rockefeller Foundation has provided funds for fellowships in twenty-one of the leading medical schools for a limited number of bright young medical graduates to supply teaching and research positions. The Foundation has made similar provision for postgraduate work in the natural and social sciences and in literature. This Foundation can provide, of course, for only a small fraction of the need; doubtless other foundations and universities will be able to provide additional fellowships.

While the war has not been won, it would seem reasonable that Congress should modify its regulations so as to permit the medical schools to be filled and young scientists to gradually resume their scientific studies. This more farsighted policy is of importance in the future economy of the nation.

SOCIAL SECURITY AMENDMENTS OF 1945

ON May 24, Senators Wagner and Murray introduced in the Senate a bill entitled The Social Security Amendments of 1945 (somehow the title suggests Follies of 1945), and simultaneously Representative Dingell introduced the same bill in the House. A detailed analysis of the bill appears in the Medical Economics section of this issue.

A perusal of the bill or the analysis shows that most of life's hazards are provided for. The bill supplants provision for hazards already cared for and adds others, notably compulsory health insurance. We note no provision for funds for medical care of the indigent, as the unemployed are not insured. As hospital care for those insured is limited to sixty days, with 120 days if the fund can afford it, the tragedy and expense of chronic illness requiring hospital care is not covered.

The Bill provides that a patient may choose his own doctor from among those who have voluntarily agreed to take part in the insurance plan. A doctor is not forced to participate in the plan, and even if he does may refuse to treat a patient. Doctors may even choose how they are to be paid, fulltime, parttime, or on a fee schedule. Designated specialists will be allowed special fees. These provisions are evidently intended to appease the medical profession which has insisted on the importance of free choice of physician.

Funds for the transaction of this stupendous project are to be in the nature of the state subsidies and loans up to 75 per cent of costs in the less prosperous states. The federal government will obtain its funds for the project from a 4 per cent tax on the wages of employes and a 4 per cent tax paid by employers. The self employed will pay a 5 per cent tax on their earnings up to $3,600. According to Senator Wagner, these payments are in the nature of contributions—not taxes. What's in a name? The funds so raised will admittedly not be sufficient, but the additional amount will come out of general government funds, obtained, we presume, likewise not from taxes but from contributions.

Senator Wagner estimates this should amount eventually to one-third of the total cost to the federal government. If that portion provided by the general funds is not sufficient, presumably more will be provided. And it should be noted that these billions of dollars will provide state subsidies and loans for about 50 per cent of the total cost, the balance to be provided by state taxes. In other words, these "contributions" of employe and employer will provide about a third of the total costs, if the Bill is enacted.

We are assured by Senator Wagner that this is not State Medicine. In our opinion, it is not only federal control of medicine but federal subsidy of many activities which should be either state or personal responsibilities.

While Senator Wagner states he has the approval of physicians of some of the provisions of the bill, organized medicine has not been consulted. The Hill-Burton Bill providing for a national survey of hospital facilities and funds for hospital construction, when the need can be shown and control of the hospitals placed in the hands of the local communities, has the approval in principle of the AMA and is sponsored by the American Hospital Association. Most so-called private hospitals have been possible through private donations but are the property of the community. It would seem that future construction will have to rely on government funds to a large degree.

We note that recently a bill was introduced in Congress for Federal subsidy for lunches for undernourished children. This important need is already being met in many localities, and is a local, not federal, responsibility. Another recently introduced bill provides for a payment to parents of $500 for the first child, $250 for subsequent children, up to $1000 total. Is the bringing of children into the world a personal or national responsibility?

Evidently there is in Washington an element bent on instituting an all-out socialistic form of government with bureaucracy rampant. Do we want it?

EMIC ACTIVITIES

"Three-quarters of a million servicemen's wives and infants received care under the emergency maternity and infant-care program in the first two years of its operation," Dr. Martha M. Eliot, associate chief of the Children's Bureau, United States Department of Labor, reported on March 18 on the second anniversary of passage by Congress of the first specific appropriation for the purpose.† The "stork bill" now totals close to $70,000,000, Dr. Eliot said, with "Uncle Sam paying doctor and hospital bills for approximately one baby out of every six being born these days."

Dr. Eliot estimates that under the emergency maternity and infant care program close to half a million babies have already been born and almost two hundred thousand are on their way, with medical, hospital, and nursing care being provided for their mothers during pregnancy, childbirth, and for six weeks after childbirth. In addition, some seventy-five thousand sick infants have been cared for. Infants are eligible for care throughout their first year of life.

All this care has been provided without cost to the serviceman or his family, Dr. Eliot pointed out. Not infrequently health officials, doctors, and nurses have gone to great lengths to get care to those in need. She paid tribute to the generous co-operation of the physicians who have given unstintedly of their time and strength when they have been hard pressed by wartime practice. Thousands of physicians and hospitals the country over have helped make this program a success, Dr. Eliot asserted.

Emphasizing that the program is a war measure only, Dr. Eliot said that nevertheless the "very magnitude of the undertaking, providing as it does for these tens of thousands of mothers and babies everywhere in the country, under all sorts of circumstances, cannot be without its long-term effects." All who have had a part in getting this care to this large segment of the population, she said, have learned must about what is involved in making good maternity and infant care available to the whole population.

With few exceptions the program is now operating smoothly everywhere in the country, and the Children's Bureau foresees its continued wartime operation until "care has been given the last eligible mother and infant." The program terminates six months after the end of the war, but care being given to the serviceman's wife or baby at that time will be completed.—Current Editorial Comment, *New York State Journal of Medicine*, July 1, 1945.

†U. S. Department of Labor, Children's Bureau News Release, March 18, 1945.

Correction.—The heading appearing on Page 473 of the June number of MINNESOTA MEDICINE should have read *Minneapolis Surgical Society* instead of Minnesota Academy of Medicine. The two papers published on Pages 473 and 474 were presented at the meeting of the Minneapolis Surgical Society held January 4, 1945.

Down through the centuries the common law has recognized the maintenance of the common health as one of the great tasks of society.—WENDELL BERGE, Assistant Attorney-General, *U. S. Pub. Health Reports*, January 5, 1945.

MEDICAL ECONOMICS

Edited by the Committee on Medical Economics
of the
Minnesota State Medical Association
George Earl, M.D., Chairman

NEW WAGNER-MURRAY-DINGELL BILL

A new program of cradle-to-the-grave security is before Congress with the introduction on May 24 of the Wagner-Murray-Dingell Bill, 1945 version. The measure designated S. 1050 was referred in the Senate to the Committee on Finance, of which Senator George of Georgia is chairman. Introduced into the House of Representatives as H. R. 3293, it was referred to the House Committee on Ways and Means, which is under the chairmanship of Representative Doughton of North Carolina.

Omnibus Social Security

The bill is designed to cover all phases of social insurance. It levies a direct tax of 8 per cent shared alike by employe and employer on all wages and salaries of all workers in private employment up to $3,600 of annual earnings, and a direct tax of 5 per cent on the earnings of all self-employed people up to $3,600 per year.

It is estimated that this tax would produce each year a fund in excess of Eight Billion Dollars. Yet nowhere, in all of the 185 pages of text, does the term "tax" appear except with reference to refunds prior to 1946 and to make records conform to sections of the Internal Revenue Code. The term "Social Security Contributions" is substituted instead.

Health insurance is to be provided for everybody. Hospital care will be provided for at least sixty days a year. Unemployment benefits will be paid for twenty-six weeks after a one-week waiting period. Size of benefits will be $5 to $20 weekly for single persons, up to $30 a week for married persons with dependents. Old age insurance benefits will be increased and coverage broadened. Present maximum benefits of $85 monthly, under the plan, are to rise to $120. Minimum benefits, now $10, will be increased to $20 a month. Farmers, professional people, small businessmen, government workers, domestic workers will be brought into the old-age system for an estimated 15 million additional persons who are not now covered. Women will be permitted to retire at sixty instead of sixty-five. Widow's benefits will start at sixty, also.

Mothers and children will get special health and welfare service through State systems of aid, supported in part by federal government grants. Federal government will increase its aid and step up its standards in a wide variety of fields of social service for needy individuals, carried out through state governments.

Employment service will be nationalized and expanded.

Various Groups Consulted

Collected into this one bill, according to Senator Wagner's speech before Congress at the time of its presentation, are most of the suggestions and proposals for social security legislation propounded by many organizations and persons, "including the American Federation of Labor, the Congress of Industrial Organizations, the Physicians Forum, the Committee on Physicians for the Improvement of Medical Care, the National Catholic Welfare Conference, the American Hospital Association, the American Public Health Association, the National Lawyers Guild, the American Public Welfare Association, the American Nurses' Association, the National Organization for Public Health Nursing, the National Farmers Union and the American Foundation for the Blind."

To quote Senator Wagner: "The health provisions of the bill have the endorsements of many persons and organizations working in medical care and related fields. Legislation providing grants for hospital construction has been endorsed by the American Medical Association,

the American Public Health Association and various labor, welfare, farm and other public organizations."

While Senator Wagner points out that he has consulted various organizations in obtaining suggestions for modification of his previous bill, he has not consulted with the American Medical Association, or as far as is known, with any of the members of its representative bodies or councils, according to statements released by that Association.

The Physicians Forum to which he refers is a group of several hundred physicians, practically all living in New York City. The Committee of Physicians for the Improvement of Medical Care, once known as the Committee of 400, now maintains a mailing list of around 1,000 physicians and is actually controlled by an inner group of a few physicians who do not in any way represent a majority of medical opinion. Thus the bill completely disregards the majority opinion of the 125,000 physicians who constitute the American Medical Association and who provide the major portion of medical practice for the people of the United States.

Ten Sections Under the Bill

The current proposals under the 185 page bill are divided into ten sections as follows:

Section 1. Short title is: Social Security Amendments of 1945.

Sections 2 and 3. Grants and Loans for Hospital and Health-Center Construction.

This section provides for a 10-year program to build, improve and enlarge hospitals and health centers as needed, especially in rural communities, and areas where facilities are overtaxed as a consequence of the war and where the need for additional facilities is likely to continue.

It would take over the proposals of the Hill-Burton bill and make of it a ten-year program at ten times the cost. In other words, there will be $950,000,000 of federal loans and grants to states, counties, cities and nonprofit organizations of which $50,000,000 is for the fiscal year 1946 and $100,000,000 for each of the nine succeeding years, to be matched on a sliding-scale formula by those getting federal money. At the end of ten years, if the plan works out, there will be about two billion dollars worth of new hospitals and health centers.

The program is to be administered by the Surgeon General of the Public Health Service, with the assistance of the Federal Works Agency, on construction matters.

Loans are to be repaid within twenty years, are limited to the hospitals that receive grants, and may not exceed 25 per cent of the cost of the project. Grants for construction projects are to be based upon the per capita income of each State compared to the average for the United States, and shall be for not less than 25 per cent nor more than 50 per cent of the cost of the project, exclusive of the cost of the site. Any balances at the end of the tenth year, and loans, as they are repaid, revert to the Treasury.

Section 4. *Grants to States for Public Health Services*

This section amends section 314 of the Public Health Service act. It proposes to extend the present grants for venereal disease and for the tuberculosis program by authorizing the appropriation for each fiscal year of a sum sufficient to carry out the purposes of the program.

The subsections dealing with public health work are revised and the present authorization of $20,000,000 a year for grants to states, is revised to provide for the appropriation of a sum "sufficient to carry out the purposes of this section."

The annual amount available to the Surgeon General for demonstrations, training of personnel and administrative expenses is increased from three million to five million dollars a year.

The amounts of the grants to states are determined by an explicit formula, designed to give more aid to the poorer states and relatively less to the richer states.

Section 5. Grants to States for Maternal and Child Health and Welfare Services.

A common plan is followed in each of the three parts, dealing respectively with maternal and child health, crippled children and child welfare. In order to receive federal grants, the states are to develop their own plans, in accordance with their own needs. These are to be approved by the chief of the Children's Bureau. Here, also, the federal grants would be on a variable basis, so as to give special aid to the poorer states, ranging from 25 to 75 per cent of the total public funds expended under the approved state programs.

Section 6. Grants to States for Public Assistance

This section provides federal grants to states for assistance to all needy persons, authorizing federal matching for money payments to the aged, dependent children, the blind and other needy individuals.

The bill requires that as a condition for receiving federal grants, states must not impose as a condition of eligibility for assistance under the plan any citizenship or residence requirements. The contention is that under the revised program the largest part of the total cost will come from federal funds and therefore, all persons in the United States who are actually determined to be needy by state agencies, should be given assistance irrespective of state or county residence or inability to prove citizenship.

The bill provides that there be one state agency and also only one local agency to administer all assistance in each locality.

Sections 7 and 8. A National System of Public Employment Offices

This section provides for an expanded national system of public employment offices established in the Social Security Board, in the words of Senator Wagner, "to bring together available workers and available jobs in the maximum use of the nation's productive facilities and manpower."

Provision is made for the establishment of a National Advisory Employment Service Policy Council for the purpose of formulating policies, reviewing administrative operations, and discussing problems relating to the Employment Service.

Sections 9 and 10. National Social Insurance System in 8 parts: (A) Prepaid Medical Care Insurance; (B) Unemployment and Temporary Disability Insurance; (C) Retirement, Survivors and Extended Disability Insurance; (D) National Insurance Trust Fund; (E) Credit established based on $160 wages for each month of military service; (F) Extends coverage to about 15 million now not included in social security program; (G) Social Insurance "contribution rates; (H) General Provisions.

This is followed by Section 10 which contains general definitions.

Section 9, however, more particularly, Part A, is of greatest interest to the medical profession. Social and health insurance is to be provided for everybody. To pay for all security offered, the planners recommend the following "social insurance contributions" be imposed:

	Employer %	Employe %	Total %
1. Retirement survivors' and extended disability insurance	1.0	1.0	2.0
2. Medical care and hospitalization insurance	1.5	1.5	3.0
3. Unemployment insurance	1.0	1.0	2.0
4. Temporary disability insurance	.5	.5	1.0
Total contributions	4.0	4.0	8.0

The word "tax" is carefully avoided. Explained Senator Wagner in its presentation: "I do not believe that social security and health legislation should be considered as a tax matter. I think that social security legislation should be handled on its merits as social legislation. Social insurance contributions are premiums for insurance protection—not general taxes for paying the expenses of Government."

Decreased Rate Explained

The fact that the total "contribution rate" provided in this bill is 8 per cent as compared with 12 per cent in his former bill, is explained thus by Senator Wagner. In the first instance, the proposed total unemployment insurance rate has been reduced from 4 to 2 per cent because the unemployment trust fund being built up under existing legislation has continued to grow so that it is now much larger than it was when the previous bill was introduced. By January 1, 1946, it is estimated that unemployment reserves will total about 7 billion dollars. Therefore, says Senator Wagner, there is no longer any question that there will be ample funds to finance unemployment benefits during the immediate postwar period.

While it is true, the 2 per cent now provided in the bill would cover current costs at our present high-level of employment, what of meeting the costs when there are larger unemployment averages over the years?

In the second instance, the combined retirement, survivors and extended disability "contribution rate" has been reduced from 4 to 2 per cent in accordance with the recent act of Congress in freezing for the fourth time the existing rate of 2 per cent.

Senator Wagner frankly admits that it will be necessary, a few years after the war, to increase this rate or provide a government subsidy to make up the expected deficit.

It is generally agreed that old-age benefit costs are sure to soar—perhaps to quintuple in twenty years; for more and more people are building up benefit rights, and, proportionately, our population is getting older.

Under any such plan of broad social security such as Senator Wagner proposes, two alternatives are presented: Either we can gear current taxes to current costs and have both increase over the years—or we can raise more in taxes than we pay in costs in order to build a reserve for a later day. The former, selected by the proponents of this legislation, perhaps appeared to be more palatable for current consumption.

Physician-Patient Relationship

In presenting this portion of the bill to Congress, Senator Wagner scrupulously pointed out that under sub-section A providing medical and hospital insurance "the freedom of medical practice is carefully safeguarded." Said he: "Each insured person is entitled to choose his own doctor from among all physicians or groups of physicians in the community who have voluntarily agreed to go into the insurance system."

It is significant to note that the term "compulsory" appears in no place in the releases made available by Senator Wagner to explain the contents of his bill and to construe its provisions. Rather he places emphasis on the contention that the legislation will not interfere with the normal relationship between the patient and his physician and on the point of view that the health insurance provisions will not be mandatory on the medical profession. However, the direct proposals under the bill nullify these blandishments.

What Choice?

It proposes that the "Surgeon General shall publish and otherwise make known in each local area to individuals entitled to benefit the names of medical and dental practitioners and groups of practitioners who have agreed to furnish services as benefits . . . and to make such lists of names readily available to individuals entitled to benefits." What choice, other than signing up, is there left to a doctor?

Proposed Method of Administration

All provisions center tremendous authority in the hands of the Surgeon General who is "authorized and directed to take all necessary and practical steps to arrange for Personal Health Service Benefits for all Social Security beneficiaries and their dependents" for an estimated 135,000,000 people.

These benefits include general medical, special medical, general dental, special dental, home nursing, laboratory and hospitalization benefits.

There is provided a National Advisory Medical Policy Council of sixteen members to be appointed by the Surgeon General from panels of names submitted by professional and other organizations concerned with medical services, education and hospitals and to include also a representative of the public. These members are to be appointed without regard to Civil Service Laws and subject to the approval of the Federal Security Administrator. However, this council is wholly advisory and without authority.

The Bill states that the methods of administration shall insure the prompt and efficient care of individuals, promote personal relationships between physician and patient, provide incentives for professional advancement and encourage high standards in the quality of service. These are worthy objectives. They will be quoted endlessly by proponents of this legislation and by those who strive to establish centralized controls in the United States.

AMA Urges Study

The American Medical Association, in its *Journal* of June 2, 1945, in commenting on the bill, urged that physicians obtain copies of the proposed act so that they might study carefully all its provisions to see for themselves the extent to which it would revolutionize and socialize medical care in the United States.

Editorial Comment in General

Quoting *The Journal of the American Medical Association* of June 2, 1945, again, among the first of the editorial comments to appear relative to the program for expanded social security was that of the *New York Times,* published on May 26.

The *Times* says that certain questions are to be asked of any proposal like the Wagner-Murray-Dingell Bill. "Will it provide relief where

it is needed without producing it where it is not needed? Will it mitigate the penalties for failure or misfortune without weakening the incentives to production and success? Will it provide aid to individuals without making them politically dependent and without dangerously extending the power of the central government?"

To these questions the *Times* replies that under the Bill, as it stands, it is more than doubtful whether these questions can be answered satisfactorily.

Available information indicates that hearings on the Bill will not be held for some time. Congress will be slow to give the country all of this plan as it is probably too much to take in one piece, and will take plenty of time for analysis and study. To date press comment generally has not been overenthusiastic for the bill—in fact most of it, including some of the labor press, has been critical.

MINNESOTA STATE BOARD OF MEDICAL EXAMINERS

J. F. DU BOIS, M.D., Secretary

Minneapolis Woman Pleads Guilty to Illegal Practice of Healing

Re: State of Minnesota vs. Marjorie J. Blatzheim.

On June 5, 1945, Marjorie J. Blatzheim, twenty-nine years of age, 2115 Third Ave. South, Minneapolis, entered a plea of guilty to an information charging her with practicing healing without a basic science certificate. The defendant, who holds no license to practice any form of healing in Minnesota, was sentenced by the Hon. W. W. Bardwell, Judge of the District Court of Hennepin County, to a term of one year in the Minneapolis Workhouse, which sentence was suspended on recommendation of the attorney for the Minnesota Board of Medical Examiners, and the defendant placed on probation for one year.

The defendant was arrested June 1, 1945, following an investigation by the Minneapolis Police Department and the Minnesota State Board of Medical Examiners, in which it was learned that the defendant had offered to perform a criminal abortion for a fee of $200. The defendant was arrested before she had a chance to perform the abortion. At the time of the defendant's arrest, police officers found a speculum in the defendant's purse, hidden on the back porch of the house at 2115 Third Avenue South. The defendant admitted that she had just purchased the speculum at a hospital supply house in Minneapolis and that she had also attempted to purchase catheters to be used in performing abortions. Upon being questioned as to the source of her knowledge of doing criminal abortions the defendant stated that she had obtained the information from a Minneapolis man who has two previous convictions for felonies and who has been in the Minneapolis Workhouse on two occasions in the past year for violating the medical laws of Minnesota.

In Memoriam

HERMAN A. H. BOUMAN

Dr. Herman A. H. Bouman, prominent Minneapolis surgeon, died Monday, June 18, 1945 of a heart attack, at the age of seventy-five.

Born in Germany and educated in elementary schools there, he came to America with his family at the age of twenty and settled in Clara City, Minnesota. He attended the University of Minnesota medical school, graduating in 1897.

Dr. Bouman taught anatomy and physical diagnosis at the University four years. Later he practiced surgery and medicine in Richmond, Minnesota, four years.

In 1910-1911 he studied in Switzerland, specializing in treatment of thyroid. He then returned to private practice in Minneapolis.

Dr. Boumann was a fellow in the American College of Surgeons and a member of the Minnesota Academy of Medicine. He was also a member of the Hennepin County Medical Society, the Minnesota State Medical Association and the American Medical Association.

Dr. Boumann was chairman of the board of directors of St. Andrews Hospital and an honorary member of the staff of Northwestern Hospital. He prepared numerous articles for MINNESOTA MEDICINE and various surgical journals.

In 1903, he married Kirsten Peterson, Webster, S. D., who died in 1940. In 1944 he married Matilda Menzel, who survives him. Surviving also is a daughter, Mrs. F. A. Zinter, Minneapolis, and three brothers, the Rev. Henry Bouman, Minneapolis; Klas, Miles City, Montana, and Bernhard, Great Neck, New York.

WARREN MAYNARD DODGE

Dr. W. M. Dodge of Farmington died April 28, 1945, at the Miller Hospital, St. Paul, at the age of seventy-eight.

He was the son of Dr. L. P. Dodge of Farmington, and was born November 19, 1866, at Farmington. He graduated from the Farmington High School in 1885 and received a B.S. degree from the University of Minnesota in 1890 and his M.D. degree also from the University in 1893. He began practicing in Farmington in 1893 and practiced there continuously until a year ago when his health began to fail.

Dr. Dodge was married to Myra Warden, a Farmington High School teacher from Hanover, New Hampshire, in July, 1893. She died in 1929. He married Inez McGraham, a former school teacher in Farmington in 1930, and she survives him. He is also survived by a daughter, Mrs. August Kulstad of Farmington; a son Dr. W. M. Dodge, Jr., of Battle Creek, Michigan, and a brother, Dr. Albert A. Dodge of Kalispell, Montana.

Dr. Dodge was active in civic affairs. He had been mayor of Farmington, a member of the village council and school board, an elder in the Presbyterian church, and a past master of Corinthian Lodge, AF and AM.

Minnesota Academy of Medicine

Meeting of March 14, 1945

The regular monthly meeting of the Minnesota Academy of Medicine was held at the Town and Country Club on Wednesday evening, March 14, 1945. Dinner was served at 7 o'clock and the meeting was called to order at 8:10 by the President, Dr. A. G. Schulze.

There were forty-nine members present.

In order to allow the Essayist of the evening as much time as possible, a motion was carried that the reading of the minutes of the February meeting be dispensed with.

The scientific program followed.

ETIOLOGY OF PRIMARY HYPERTENSION

E. T. BELL, M.D.
Minneapolis, Minnesota

Dr. Bell, of the University of Minnesota, gave the paper of the evening on the above subject. Lantern slides were shown.

The meeting was adjourned.

J. A. LEPAK, Secretary.

Meeting of April 11, 1945

The regular monthly meeting of the Minnesota Academy of Medicine was held at the Town and Country Club on Wednesday evening, April 11, 1945. Dinner was served at 7 o'clock and the meeting was called to order at 8:10 by the President, Dr. A. G. Schulze.

There were fifty-five members and one guest present.

Minutes of the March meeting were read and approved.

Upon ballot the following men were elected as candidates for membership in the Academy:

Dr. Jas. K. Anderson, Minneapolis
Dr. Logan Leven, Saint Paul.

The scientific program followed.

ADENOMYOSIS, ENDOMETRIOSIS AND CYSTOMYOMA

Report of a Case

LEE W. BARRY, M.D.
Saint Paul, Minnesota

Mrs. C. A. J., aged thirty, consulted me in September, 1944, because of severe pain in the left side of her pelvis accompanied with polyhypermenorrhea. This pain began three months before her marriage in 1938 and had increased in severity. The polyhypermenorrhea had begun four months previous to her visit to me. Dyspareunia caused the patient to separate from her husband four years ago. Shortly before leaving her husband, she bled profusely and was curetted for a suspected incomplete abortion. The curettings, however, showed no evidence of pregnancy.

At the time the patient consulted me her blood pressure was 115/75. Her hemoglobin was 70 per cent (11.7 gms.). The external genitalia, vagina and cervix were normal. The uterus was twice normal size, in second degree retroversion, and adherent in the cul-de-sac. A fibroid about three centimeters in diameter was palpated on the left side of the fundus at the level of the cervical-corporeal junction. Another much larger fibroid projected from the top of the fundus of the uterus. There was marked induration in the posterior vaginal vault and considerable spasm of the utero-sacral ligaments. Due to extreme tenderness, the ovaries and tubes were not palpable.

Because of profuse uterine bleeding from December 15 to December 20, 1944, accompanied by an increase of the pelvic pain, an operation was advised. A pelvic laparotomy was done January 11, 1945. Upon opening the peritoneal cavity, the uterus was found to contain two fibroids, and was fixed in the cul-de-sac by dense adhesions. Both ovaries were about four times normal size and each contained a large tarry cyst. The peritoneum over the bladder and the round ligaments were studded with small endometriotic lesions. There was considerable endometriotic induration of the cul-de-sac and the sigmoid at the rectosigmoidal junction. The ovaries, tubes and uterus were freed from the cul-de-sac and a supravaginal hysterectomy and bilateral salpingo-oöphorectomy was carried out. The raw surface was peritonealized by suturing the round ligaments and the peritoneum above the bladder into the cul-de-sac below the stump of the cervix. The appendix was normal and was not removed. The operation consumed one hour and eleven minutes. The patient had an uneventful convalescence and left the hospital on the tenth postoperative day.

A pelvic examination six weeks after the operation disclosed no tenderness or induration in the cul-de-sac or vaginal vault. The patient complained of mild hot flashes, for which a daily dose of 0.25 mgm. diethylstilbestrol was prescribed.

Following is the pathological report of the specimens removed:

Gross.—The specimen consists of an irregular uterine mass minus the cervix and both adnexae. The uterus, itself, is about 5 cm. in length and 4 by 3 cm. at the fundus. The endometrium is somewhat increased in amount. Near the cervix is a fibroid about 2½ cm. in diameter. There is a larger fibroid arising from and contiguous with the fundus. This is about 8 cm. long and 5 by 5 cm. On sectioning the tumor, there is an irregular cavity, somewhat compressed, about 3 cm. in length

on the surface. This is surrounded by the usual myomatous tissue and contains a brownish material. The tubes appear normal. Both of the ovaries are enlarged and cystic and have several hemorrhagic cysts containing chocolate brown material.

Microscopic.—The tumor at the fundus consists of interlacing bundles of smooth muscle fibers in a dense connective tissue stroma. There is a large cystic space within the tumor. This is lined by multiple layers of epithelium which rest on a loose endometrial stroma. The endometrium is moderately thickened due to diffuse edema and irregular tortuous glands lined by pseudopapillary secreting columnar epithelium. The myometrium is somewhat edematous. The ovary is diffusely edematous and congested and has several cysts. Some of the larger cysts are lined by a vascular granulation tissue showing infiltration of many pigment-laden, so-called pseudo-xanthoma cells and some lymphocytes and plasma cells. The remainder of the ovarian tissue appears diffusely fibrous. The tube shows edema and congestion of the mucosa.

Diagnosis.—Multiple fibromyomas of the uterus; fibro-adenomyoma; endometrial cysts of the ovary.

(Signed) KANO IKEDA.

At the request of Dr. Ikeda, Dr. Robert Meyer carefully examined the gross specimen and microscopical sections of the larger myoma. This tumor contained endometrial-cell-lined spaces which were apparently connected with the endometrium of the uterine cavity. Due to the fact that these endometrial cells did not invade the wall of the myoma (so characteristic in adenomyosis interna), Dr. Meyer considered this a cystomyoma. Cystomyomata are rare, not more than a score or so having been reported. They may originate from the uterus, from the wolffian body or have an entirely indeterminate source.

From the above pathological report it is evident that the patient was suffering from a combination of endometriosis, cystomyoma and myomata. Myomata accompany adenomyosis interna and endometriosis in about 80 per cent of the cases.

One encounters various forms of adenomyosis and endometriosis in from 10 to 20 per cent of pelvic laparotomies. Adenomyosis of the uterus occurs in three different forms, namely: adenomyosis interna, adenomyosis externa and salpingitis isthmica nodosum.

The histogenesis of adenomyosis interna has been definitely proved. The uterine musculature is invaded by the uterine glands and stroma cells of the basal layer of the uterine endometrium. Proliferation of the uterine musculature is stimulated by these invading cells and their stroma. This invasion may result in either a diffuse or discrete enlargement of the uterine wall. These discrete enlargements are usually moderate in size. They may, however, grow as large as a newborn baby's head. On palpation there is no way of differentiating them from uterine myomata.

Adenomyosis externa is due to invasion of the uterine wall from without by endometrial cells. The uterine musculature reacts to this invasion with the production of nodules which are usually smaller than those of adenomyosis interna. Similar adenomyotic nodules may develop on the round and the uterosacral ligaments. Endometriosis of the ovary occurs in three different forms, namely: adenomyosis, superficial surface lesions and tarry cysts. The first, adenomyosis, is extremely rare, while the latter two occur with comparative frequency.

Unlike adenomyosis interna, the histogenesis of endometriosis has not been definitely proved. In 1921 Sampson introduced the implantation theory. This was to the effect that living endometrial cells and their stroma were regurgitated through the fallopian tubes during menstruation, implanting themselves upon the ovaries and pelvic peritoneum.

The serosal theory of endometriosis is warmly supported by Robert Meyer and Emil Novak. They believe that the mesothelial cells of the pelvic peritoneum through some hormonal influence are capable of differentiating *in situ*, into endometrial glands and stroma.

Halban and Sampson, working independently, have propagated the theory that in certain cases endometrial cells are transported by the blood or lymph stream to the pelvis and distant parts of the body. In this way they explain the occurrence of endometriosis in the labia, the perineum, thighs and arms.

The symptomology of the case reported by me is definitely characteristic of endometriosis, namely:

1. Age of incidence of pain, between age of twenty-three and the menopause.
2. Abnormal menstruation, polyhypermenorrhea.
3. Sterility.
4. Dyspareunia.
5. Secondary dysmenorrhea.
6. One-sided pain.

Objectively an adherent retroversion of the uterus combined with painful induration of the cul-de-sac and uterosacral spasm pointed strongly to an extensive pelvic endometriosis.

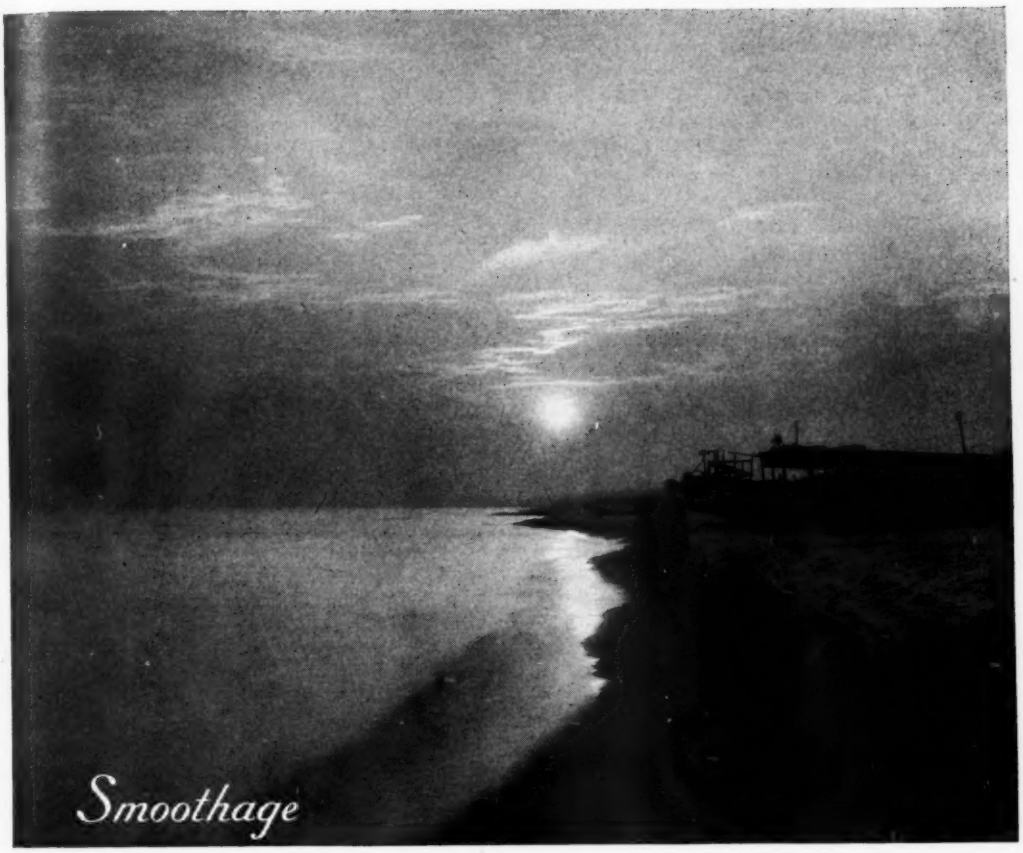
In the treatment of endometriosis it must be clearly recognized that endometriosis is a disease process dependent upon ovarian function. As long as this function persists, the disease will progress leading at times to destructive involvement of all the organs contained within the pelvic cavity. Removal of the ovaries results in a cessation of all the invasive processes with oftentimes a gradual but surprising return of the involved tissues to a nearly normal state. Extensive endometrial involvement of the bladder, sigmoid, rectum or small intestine may need no further treatment other than bilateral oöphorectomy and time to effect a cure. Withdrawal of ovarian stimulation usually results in atrophy and almost complete disappearance of large endometrial infiltrated areas.

In certain cases of large ovarian endometriomas, and in the presence of dense adhesions, removal of all the ovarian tissue may be neither feasible nor possible. In such circumstances menopausal doses of x-ray have been followed with excellent results.

An attempt should be made to conserve the child-bearing function in the milder cases of endometriosis. In this group are found the small ovarian adenomas and ovarian implants. These can be cured by simple excision.

In the above reported case the presence of large tarry cysts in both ovaries combined with marked endometrial invasion of the cul-de-sac and rectosigmoidal junction made bilateral oöphorectomy the treatment of choice. The useless uterus containing the cystomyoma and

(Continued on Page 592)



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SEARLE

RESEARCH IN THE SERVICE OF MEDICINE

myoma was removed to facilitate adequate peritonization of the raw surface.

I greatly appreciate the help given me in this case by Dr. Robert Meyer and Dr. Kano Ikeda.

THE SURGICAL MANAGEMENT OF CEREBRAL ANEURYSMS

With Special Reference to Arteriovenous Fistulae Between Internal Carotid Artery and the Cavernous Sinus

A. W. ADSON, M.D.
Rochester, Minnesota

Dr. Adson, of Rochester, gave a talk and lantern-slide demonstration on the above subject.

The meeting was adjourned.

J. A. LEPAK, M.D., *Secretary.*

WOMAN'S AUXILIARY

MRS. ANTHONY J. BIANCO, *President*
Duluth, Minnesota
MRS. ROYAL V. SHERMAN, *Editor*
Red Wing, Minnesota

ANNUAL REPORT OF THE PRESIDENT

Today marks our twenty-third year as a State Auxiliary to the Minnesota State Medical Association. Looking over our history, I was interested to find that the first county medical auxiliary in America was founded when forty women met in Minneapolis to organize an auxiliary to the Hennepin County Medical Society. That was on October 7, 1910—thirty-five years ago. I am sure that if some of the original forty were here today to hear the splendid reports that have been given by officers, county presidents, and chairmen of committees, they would marvel at the mighty organization that is still growing and flourishing from their early and tenderly cared for seed. Looking back, and reviewing the progress we have made, I am sure they would feel a sense of pride in our accomplishments.

I shall not elaborate on the work of the various chairmen, as their inspiring reports and intelligent efforts speak for themselves. It is interesting to note the achievements of the county presidents and gratifying to know that all our members are doing war work in some form or other. Now that V-E Day has come and gone, we must realize that the struggle is not over, but that the real battle for the end of the war has just begun. I am sure the thoughts and efforts of each member of the Auxiliary is now concentrated on how we may help to win the war, speed the peace, and help to build a better world for the future.

During the past year, many of our members have been doing Red Cross work, making dressings for the Cancer Home in Saint Paul, collecting medical and surgical supplies, promoting friendliness among members, having public relations meetings and teas, helping their husbands in their offices (some as former nurses, and some as general office workers), paying the dues of members whose husbands are in the service, giving subscriptions to *Hygeia* to schools and public institutions, and sponsoring the Christmas Seal Contest. This contest originated in Minnesota in 1931 and has attracted national attention. These projects are essential to the war effort, and now that the end is in sight, we must redouble our efforts along these lines.

During the past year I had the pleasure of attending two national board meetings in Chicago, where many problems of great interest were discussed by all attending members. Your president was also selected to serve on the national recommendations committee. I have also attended several county auxiliary meetings, and I regret that travel conditions prevented my attending more. In the future, I recommend that about six regional meetings be held with the president throughout her term of office. In this manner all counties would be contacted and problems peculiar to each could be discussed. Travel restrictions, because of the war, would thus have no bearing on necessary meetings.

To my successor, Mrs. E. V. Goltz, I extend my best wishes for a pleasant and successful year. I hope she will derive as much pleasure from being your president, as I have during this past year.

No words are adequate to express my innermost feelings and thanks to all the officers, county presidents, and chairmen of standing committees. You have been most willing and eager to co-operate in helping to make the year a happy one for me. I wish also to thank my advisory council and advisory committee. Your friendly letters and helpful suggestions have been greatly appreciated. You have been like the good friend that offers to walk home a short distance with one in the dark, and then ends up by *going all the way!*

Respectfully submitted,

AMY WALSH BIANCO.

MOWER COUNTY

Members of the Auxiliary to the Mower County Medical Society entertained their husbands at a 7 o'clock dinner, May 28, at the Fox Hotel, Austin. Covers were laid for twenty-two members and guests.

Major and Mrs. P. C. Leck of Spokane, Washington, Dr. and Mrs. G. J. Schottler of Dexter and Dr. A. E. Henslin of LeRoy were out-of-town guests.

A short business meeting was conducted, and following dinner bridge was played, Mrs. G. E. Hertel and Major Leck winning prizes. Mrs. H. B. Allen and Mrs. P. A. Lommen were in charge of arrangements.

Of General Interest

Dr. Rodney F. Kendall opened his office at 1160 Lowry Medical Arts Building, Saint Paul, on July 2, 1945, for the practice of dermatology and syphilology.

* * *

Captain William E. Wellman, of Virginia City, is on duty at Fort Snelling, after a year's service in the South Pacific Area.

* * *

Promotion of Dr. Charles W. Mayo, Rochester, to full colonel in the army medical corps was announced in the Minneapolis *Morning Tribune* on May 18.

* * *

Dr. Walter D. Broadie, of St. Paul, has been commissioned a lieutenant commander in the Navy and has been on hospital duty in Chicago since May 22.

* * *

Dr. M. I. Hauge, of Clarkfield, joined the staff of the Montevideo Hospital on May 1, following the closing of the Clarkfield Hospital because of shortage of help.

* * *

Dr. George Eusterman, Mayo Clinic, was guest lecturer at the Annual Postgraduate Meeting of the University of Michigan at Ann Arbor, the last week of May.

Commissioned a lieutenant (jg) in the Navy, since he entered practice at Grove City on April 10, Dr. Kenneth Kelley has closed his offices there and reported for duty at the Great Lakes Naval Training Station.

* * *

Dr. E. J. Tanquist is general chairman of Minnesota's Twenty-Fourth Annual Resorters Golf Tournament, to be held in Alexandria, August 1 to 5. According to the announcement received from the Alexandria Golf Club, this is the finest golf course in the country; grass greens—watered fairways—and all!—Why not vacation at Alexandria?

* * *

Dr. C. W. Moberg is chairman of the committee appointed by the Detroit Lakes Civic and Commerce Association to promote their locality as the site for the new state institution for the feeble-minded now being planned.

* * *

Dr. J. Grafton Love, of the Mayo Clinic, was a guest speaker at the Annual Clinic Day of the Alumni of Wayne University, College of Medicine, in Detroit, Michigan. "Protruded Intervertebral Disks" was the subject of Dr. Love's address.

* * *

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BALTIMORE, MARYLAND

charge, Dr. George A. Williamson, formerly of St. Paul, has opened offices in Phoenix, Arizona, and will specialize in orthopedics. Dr. Williamson expects to remain permanently in Phoenix.

* * *

The appointment of Dr. Thomas G. Wellman to a captaincy has been announced by the War Department. Captain Wellman, who formerly practiced at Lake City and Virginia City, is stationed at the Stuttgart Army Air Field, Stuttgart, Arkansas. He has been in service since February, 1943.

* * *

Lieutenant William Walter Wood, Jr., graduate of the University of Minnesota Medical School, Class of 1937, is now attached to the Naval Hospital at Shoemaker, California, following twenty-one months of service in the South Pacific area. He is the son of Dr. W. W. Wood, of the Jamestown Clinic, Jamestown, North Dakota.

* * *

Dr. Cecil J. Watson, professor of medicine at the University of Minnesota, has been appointed on the advisory council of the Life Insurance Medical Research Fund which has been established by the Life Insurance Association of America for research in diseases of the heart and arteries.

* * *

The Croix-de-Guerre, coveted French decoration, has been presented to Major Ralph W. Wise, a former fellow in surgery at the Mayo Foundation. The accompanying citation read in part: "For exceptional services of war, rendered during the course of the operations involving the liberation of France." Major Wise, a group flight surgeon of the 279th bomb group, also holds the Bronze Star Medal, awarded for meritorious achievement.

* * *

Shortage of physicians was the excuse offered by the New York Legislature for the passage of two bills during the past session which would have permitted licensing graduates of any medical school in the United States. Fortunately, however, Governor Thomas L. Dewey vetoed both bills, thus preventing undermining of the high educational standards which the profession has sponsored and valiantly maintained for so many years.

* * *

The tuberculosis sanatorium conducted by the Metropolitan Life Insurance Company for their employes at Mount McGregor, New York, since 1913, will be closed permanently in September. During its operation the sanatorium has cared for more than 500 patients, but the decline in tuberculosis is such that the maintenance of so large an institution is no longer practical. Hereafter, the company will have its tuberculous employes cared for in sanatoriums near their homes.

* * *

Dr. Helen W. Bane is now practicing in Brainerd, where she is associated with Dr. George Halliday with offices in the Baehr Building. After her graduation

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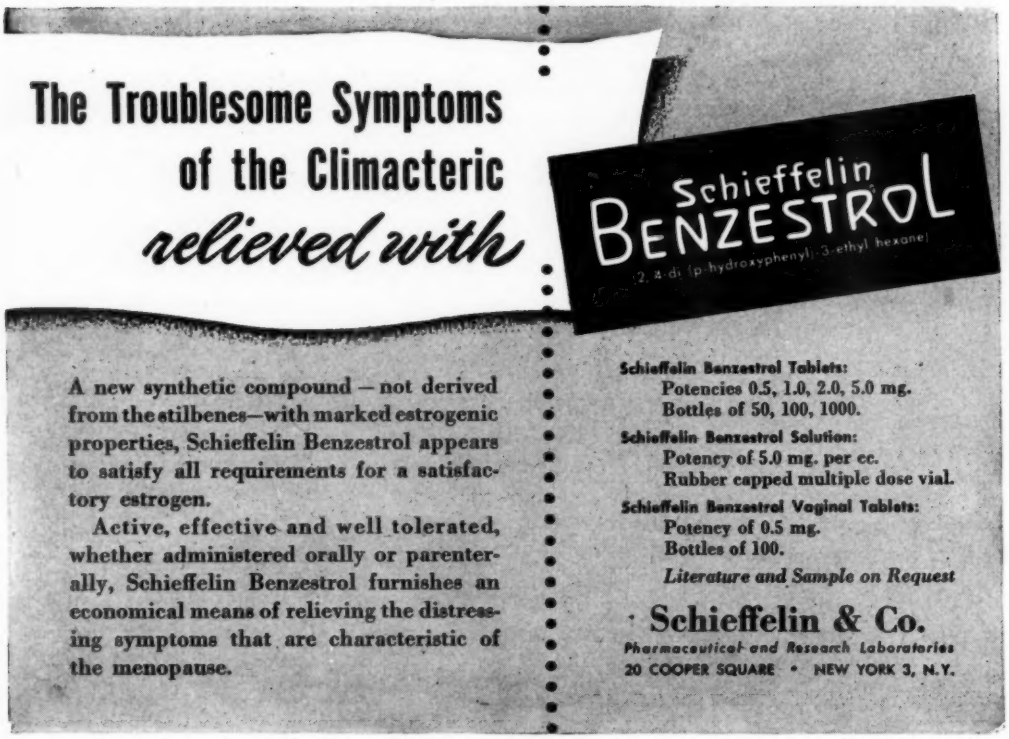
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from the University of Minnesota, Dr. Bane interned at the Medical Center in Jersey City, N. J. She also had a residency at the Franklin County Hospital at Farmington, Maine, and practiced medicine for three years in Beloit, Wisconsin. Later she was associated with the Jackson Clinic in Madison, Wisconsin. Dr. Bane's parents are residents of Brainerd.

* * *

Majors Luther H. Wolff, Gordon F. Madding and Hugh F. Swingle, former fellows in surgery at the Mayo Foundation, have been especially commended for outstanding performance of duties by the Commanding Officer of the 2nd Auxiliary Surgical Group. The three surgeons, who were in charge of the general surgical teams functioning in priority surgical hospitals, participated in the North African, Sicilian, Italian, French and German campaigns.

* * *

In a broadcast from Osaka, Japan, on May 1, 1945, Captain James K. Keeley, formerly of the Mayo Clinic, reported that he is doing medical work there. Captain Keeley, who has been a prisoner of war since 1942, said that he had been transferred from Davao, Mindanao, to Osaka in June, 1944, and that he has had no news of his family. Messages limited to twenty-four words may be sent to him. His address is Captain James K. Keeley, United States Prisoner of War, Osaka Camp, Japan, via New York.

Members of the Carver County Medical Association were hosts at a testimonial dinner at the Minneapolis Automobile Club on June 5, in honor of Dr. William Phillips, Jordan, Dr. W. H. Reiter, Shakopee, Dr. H. E. Wunder, Mudcura, and Dr. E. E. Novak, New Prague. The occasion marked the completion by all four physicians of fifty years, or more, of service to their separate communities.

Dr. Phillips, who is a graduate of the University of Minnesota, 1894, was again honored on the following Sunday at a "Phillips' Day" picnic and program in Jordan.

HOSPITAL NEWS

The Marshall Hospital, buildings and equipment valued at between $50,000 and $60,000, was transferred to the Louis Weiner Memorial Hospital, Inc., by Drs. F. D. Gray and B. C. Ford on May 17, effecting an important step in the new hospital plans. The Weiner Memorial Association has signed a contract with Ellerbe and Company, St. Paul architects, who do all the Mayo Clinic Buildings. Construction work on the new hospital will begin as soon as materials are available. Pending construction, hospital service will be maintained at the Marshall Hospital. The new hospital, which will be a memorial to the late Louis Weiner, Marshall produce dealer, will cost $150,000. It will be open to all accredited doctors,

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* * *

The Willmar State Hospital entertained the four subcommittees of the Kandiyohi County Nursing Service on May 15. About fifty members attended the meeting which was addressed by the superintendent, Dr. S. B. Lindley, who spoke on the importance of adequate hospital service to the community. At the present time the Willmar Hospital houses 1,400 patients.

* * *

Forty-three years of efficient and faithful service were terminated when William Crane retired as steward of the St. Peter State Hospital on May 18. During that time Mr. Crane had served under three different superintendents. Dr. H. A. Tomlinson was the first, then Dr. R. M. Phelps, and the present superintendent, Dr. George H. Freeman.

Born at Fort Wingate, New Mexico, in 1875, where his father, an Indian agent, had traveled from Minnesota via covered wagon for ninety-nine days, the pioneer strain was strong in William Crane. After his father's death during an Indian uprising in 1877, his widowed mother traveled with her five children in covered wagon to Denver, then to Winona by train, where Mr. Crane lived until he went to work at St. Peter in 1902.

During his years of stewardship Mr. Crane has seen many changes. At first all the farm work and hauling were done by oxen, and there was only one building for both patients and executive offices.

Mr. Crane will make his home with his wife and children—Paul, recently released from military service on a medical discharge, and Lucille and Esther.

* * *

According to information released by the Veterans' Administration in Washington, ground will be broken for the construction of the new $420,000 administration building at the Veterans' Hospital in Minneapolis as soon as the contracts have been let, which should be in the near future. This is the first unit in the expansion program for the hospital, which also includes conversion of the present two-story-and-basement administration building to hospital service with accommodation for 200 additional beds, and construction of a 300-bed surgical building. Completion of the work will increase total bed capacity to 1200. On an average basis of eight patients per bed annually, it will be possible to care for approximately 10,000 during the year.

Clinic services will be established in downtown Saint Paul, Minneapolis, and Duluth, as soon as equipment and professional staffs are available. About forty-five branch and contact offices will be opened in the larger cities of the State, with doctors in each locality retained by the Veterans' Administration for examination and treatment of veterans on a fee basis. Surveys for housing for this purpose are now under way, and one such office is already in operation in Virginia.

REPORTS and ANNOUNCEMENTS

AMERICAN CONGRESS OF PHYSICAL MEDICINE

The annual scientific and clinical session for 1945 of the American Congress of Physical Medicine has been cancelled. This meeting was to have been held in New York City, September 5 to 8, 1945.

* * *

SECOND LASKER AWARDS FOR FERTILITY RESEARCH AND MATERNAL CARE

For the second successive year, two $500 Lasker awards will be given through the Planned Parenthood Federation of America, Inc. for significant contribution to the improvement of maternal health care and for research in human fertility.

The two Albert and Mary Lasker Foundation awards were announced today by Dr. J. H. J. Upham, chairman of the Federation's National Medical Advisory Council, who said: "We still know less about the science of reproduction 'than the science of mechanized warfare, and health care for pregnant mothers, in many parts of the country, is still fifty years behind medical knowledge."

The awards will be as follows:

1. To the scientist making the most significant contribution in research in human fertility—either in the control of conception or in the correction of infertility.

2. To the public health service in a state or community for meritorious action in developing a complete program of maternal health care, including child spacing. The individual recipient of the award will be the executive officer most responsible for the development of the program.

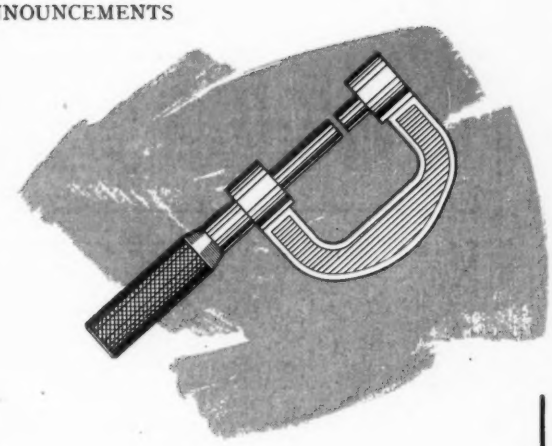
The fertility award will be given in honor of the late Dr. Hannah M. Stone, first medical director of the Margaret Sanger Research Bureau, co-author of the famous "Marriage Manual."

The public health award will be in honor of Mrs. Margaret Sanger, founder of the birth control movement and at present honorary chairman of the Federation.

The awards will be presented at the Annual Dinner of the Planned Parenthood Federation of America in New York in January, 1946. Deadline for submission of entries for the awards will be December 1, 1945. Members of the Federation's Medical Committee headed by Dr. Richard N. Pierson of New York, will serve as judges.

Two similar awards were presented last January to Dr. John MacLeod of the Department of Anatomy, Cornell University Medical College and to Dr. Felix J. Underwood, executive office of the Mississippi State Board of Health.

Any individual wishing to qualify for the awards, or to suggest the name of a scientist, physician or public health official who might do so, should address the Medical Committee, Planned Parenthood Federation of America, 501 Madison Avenue, New York 22, N. Y.



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BOOK REVIEWS

Books listed here become the property of the Ramsey, Hennepin and St. Louis County Medical Libraries when reviewed. Members, however, are urged to write reviews of any or every recent book which may be of interest to physicians.

RYPINS' MEDICAL LICENSURE EXAMINATIONS. Topical Summaries, Questions and Answers. Fifth Edition. Editorial direction of Walter L. Bierring, M.D., F.A.C.P., M.R.C.P., Edin. (Hon.) Member, National Board of Medical Examiners; Secretary, Federation of State Medical Boards of the United States. 546 pages. Price, $6.00, cloth. Philadelphia: J. B. Lippincott Co., 1945.

MEN UNDER STRESS. (In and After Combat). Lt. Col. Roy Grinker, MC, Army Air Forces. Formerly Fellow of the Rockefeller Foundation and Chairman of the Department of Neuropsychiatry, Michael Rees Hospital, Chicago; and Major John P. Spiegel, MC, Army Air Forces, formerly of the Department of Psychiatry, Michael Reese Hospital, Chicago. 484 Pages. Price, $5.00, cloth. Philadelphia: Blakiston Co., 1945.

THE MANAGEMENT OF OBSTETRIC DIFFICULTIES. Paul Titus, M.D. Obstetrician and Gynecologist to St. Margaret Hospital, Pittsburgh; Consulting Obstetrician and Gynecologist to Pittsburgh City Homes and Hospital, Mayview, and to the Homestead Hospital, Homestead, Pa.; Secretary of American Board of Obstetrics and Gynecology; Commander (MC) USNR, attached to Professional Division, Bureau of Medicine and Surgery, Navy Department, Washington, D. C. 1000 pages. Illus. Price, $10.00, cloth. St. Louis: C. V. Mosby Co., 1945.

A SYNOPSIS OF MEDICINE. Eighth Edition. Sir Henry Letheby Tidy. K.B.E., M.A., M.D., B.Ch. (Oxon)., F.R.C.P. (Lond). Extra Physician to H. M. the King; Consulting Physician to St. Thomas' Hospital, Hon. Major General, Lately Consulting Physician to the British Army. 1215 pages. Price $7.50, cloth. Baltimore: Williams & Wilkins Co., 1945.

COMMON AILMENTS OF MAN. Edited by Morris Fishbein, M.D. 177 pages. Price, $1.00, cloth. Garden City: Garden City Publishing Co., 1945.

SEGMENTAL NEURALGIA IN PAINFUL SYNDROMES. Bernard Judovich and William Bates. 312 Pages. Illus. $5.00. Philadelphia: Davis, 1944.

This work represents the combined efforts of a neurologist and a surgeon in the analysis and the interpretation of painful syndromes, encountered at various segmental levels of the body. Among the more common etiologic factors are infections, trauma, postural defects and spinal arthritis. After outlining methods of examination, the authors discuss "Posture in Relation to Abdominal Pain and Tenderness and Ptosis of the Abdominal Organs." This is followed by a brief outline of treatment, including removal of focal infection, postural correction, mechanical supports, physical therapy, drug therapy and nerve block—therapeutic measures which are useful in most types of neuralgia. Description of the dermatomes is accompanied by nu-

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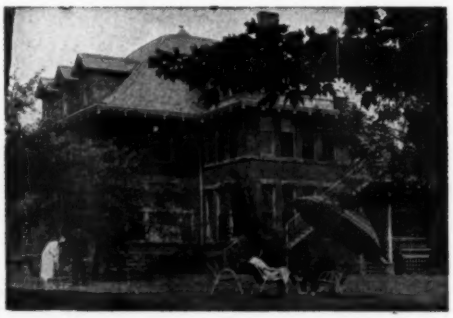

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merous illustrations showing the sensory distribution of spinal nerves, as determined by several different authorities.

Clinical pictures which are discussed include brachial plexus pain, the scalenus anticus syndrome, pain and tenderness of the chest wall, abdominal pain, abdominal scars and adhesions, low back pain and lower quadrant abdominal pain, sciatic nerve pain, herpes zoster and occipital neuralgia. One chapter on trigeminal neuralgia is written by Dr. Robert Groff.

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Two chapters are devoted to a description of the technique of paravertebral injections of spinal nerves and one chapter to paravertebral infiltration of the sympathetic ganglia.

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Volume I, 1945, eighteenth anniversary issue of the *Harofe Haivri* (The Hebrew Medical Journal), edited by Moses Einhorn, M.D., has just made its appearance. This special issue is dedicated to the late Henrietta Szold, distinguished humanist and Zionist, who harnessed American Jewish womanhood in a great organization, Hadassah, which is responsible for the vast network of medical and sanitary installations in Palestine, making it the outstanding health center of the whole of the Middle East.

Mrs. Rose G. Jacobs, an intimate friend and co-worker, who was president of Hadassah for five years, presents a very interesting article entitled "Henrietta Szold's Contribution to the Health of the Body and Soul of Palestine;" Mrs. Tamar De Sola Pool, also former president of Hadassah for four years, gives a detailed account of the life and work of Miss Szold.

Dr. S. R. Kagan contributes an article of particular interest on the contribution of the pioneer physicians to the growth and development of the Zionist movement throughout the world. Since the Middle Ages the Jewish physician has exerted great influence on the communal life of Israel.

There is also a detailed English section containing summaries and translations of all the articles for those readers who do not understand Hebrew.

Copies of this issue may be obtained from the editorial office of *The Hebrew Medical Journal*, 983 Park Avenue, New York 28, New York.

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I have just recently been placed on the "inactive" list of Army Officers, having spent 18 months in General Eisenhower's Hqs. in Africa, and also several months convalescing in Walter Reed General Hospital in Washington.

I have established a special department here to handle all employee and employer needs for doctors, hospitals, clinics, etc. I urge all doctors and hospitals needing competent medical help, and all nurses, dietitians, technicians, medical secretaries, record librarians, etc., who need positions, to contact me as soon as possible.

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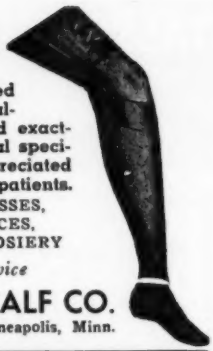

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CORRESPONDENCE

27 May 1945

Gentlemen:

Although I have not had the opportunity to practice medicine for the past four years, I like to keep in touch with MINNESOTA MEDICINE. Though most issues catch up with me somewhat late, it is still a pleasure to get them.

After considerable moving around through England and France with the 217th General Hospital (as executive officer) I was transferred as an instructor to the Disarmament School in London. Later I found myself on the Enemy War Materiels Branch, G-4 SHAEF, and have now finally become settled on the Hospitalization Sub-Section of Demobilization Branch of our Control Council. Here I am thrown together with some of the Army's top-notch planners and policy makers and, though somewhat removed from the practice of medicine in Minnesota, it has proved very interesting. Contrary to a good many expressions in the U. S. press, the Army has a very well worked out plan for the occupation and de-Nazification of Germany. The demobilization of the German Wehrmacht went into effect according to plan within three days after surrender. The plans for care of displaced people and the repatriation of allied prisoners of war were in effect long before that, and it looks to me like the Army is doing a pretty good job.

Very truly yours,

FRED H. WIECHMAN

MULTIPLE MALIGNANT ARGENTAFFIN (OR CARCINOID) TUMOR

(Continued from Page 559)

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